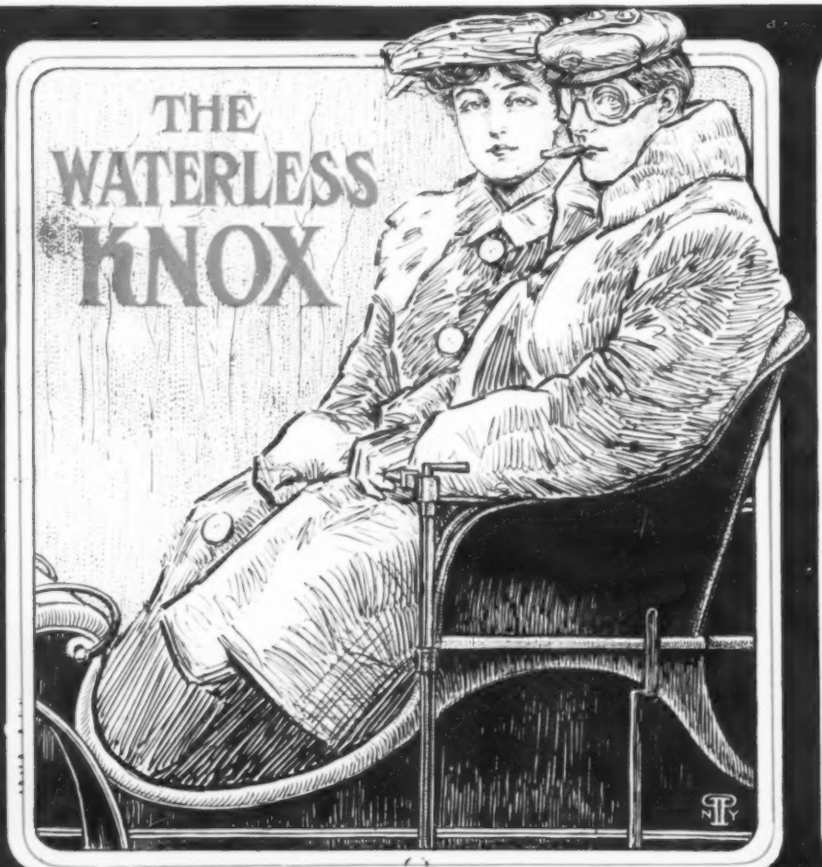
THE AUTOMOBILE

WEEKLY — NEW YORK—SATURDAY, FEBRUARY 27, 1904—CHICAGO — 10 CENTS



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THE AUTOMOBILE

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Auto Boats at the Sportsmen's Show.

Entire Exhibition at Madison Square Garden Centers Around Huge Tank Where Speed Launches are Operated and Prospective Customers Given Rides.

IN its early years the annual Sportsmen's Show at the Madison Square Garden was what its name indicates, a collection of the appliances of all outdoor sports. Of late years, however, it has been only by a few of the standard makes of launches and some motors. This year there is evident a marked change; the show is none the less specialized, but in an entirely new direction. No longer do monotonous chant of the Indians is replaced by the lively "teuf-teuf" of the high-speed motors, while the odors of the pines and spruces used in ornamentation are lost in the sharp and piquant scent of

VIEW OF HUGE LAUNCH TANK IN MADISON SQUARE GARDEN, FROM WEST END BALCONY.

mainly an exhibit of guns, powder, fishing tackle and purely hunting paraphernalia, with an assemblage of guides and Indians. Nautical sports have been represented Hee-aw-war-thaw and his Ojibway friends disport on the waters of the lake. In their places are auto boats, suggestive of the Seine rather than the Hudson; the burned gasoline. While there are other features, the Show is virtually an exhibit of launches, and of a type, too, that is new to New York. Here where a few years

ago the automobile really made its first public appearance *en masse* before the New York public its younger sister, the "auto-boat", now makes her debut.

While the launch is the dominating attraction of the Show, the traditions are observed by the general style of the decorations, the vestibule is lined with spruce and cedar trees and they are used liberally in all parts of the main hall, the background, newly painted, is a woodland scene. A part of the space around the outer circumference of the main floor is given up to a few exhibits of live game and to the magnificent collection of pheasants, the finest in the world, owned by Homer Davenport, the cartoonist. This collection itself is worth the careful study of all those who are capable of enjoying the work of nature without an immediate desire to destroy it by means of gunpowder. The waste space above the cages of the pheasants is utilized for model fish hatcheries, and the anglers are also solaced by fly-casting competitions. There is the usual sale booth for Indian goods, and there are some camps and woodsmen, but fewer than in former years. After a long absence from the scene, the bicycle once more appears, having taken complete possession of the Concert Hall. The galleries are devoted to the smaller booths, displaying gasoline motors, electric appliances, sporting goods, etc. A Marconi wireless telegraph apparatus is in operation within the main hall.

The view from the upper gallery shows the entire center of the main floor covered with a very strongly built tank, lined with a huge bag of waterproofed canvas, the depth of water being four feet. There is little attempt as of old to give this water the semblance of a natural lake, but all four sides are taken up by carpeted spaces, each with its short flight of steps leading to the landing stage at the top, to which is moored a lively puffing launch. Each stand is marked by the usual signs, the Lozier, the Speedway, the Standard and other well-known names. There is little attempt at special decoration, the most prominent in this line being the Smith & Mabley stand, well set off by flags, and the ornamental construction in white of the F. I. A. T. motor.

While the tank is too small for the safe navigation of even a low-speed launch, and most of the speed launches are kept permanently moored to their berths, they are all under power, with every motor gaily humming, the exhaust telling its own tale of good or bad carburetion; the whole scene being a good imitation of real launch work in a lock or similar confined basin. By way of special attraction a line of gasoline packets plies regularly around the tank, carrying passengers at ten cents per head for the trans-Garden passage, and grown men as well as children avail themselves of the chance for an "outing" on the water in mid-winter.

The launch exhibit is not only interesting but most remarkable when it is considered that only a year ago nothing of the kind was in any way indicated. The launches and motors then shown, and there were quite a number, were uniformly of the ordinary type, the heavily built single-skin hull of large displacement, with a motor built principally of cast iron after conventional lines. Our regular readers will recall the extensive report of the Show published in THE AUTOMOBILE. The service launch is well represented this year as well, but it stands second to the "auto-boat." In general type the new craft is narrow and shoal in hull, of limited displacement, with very fine lines. The hull is constructed of mahogany, at least for the outer of the two thicknesses of planking, while the deck is of light mahogany or sheet metal. The motors are either those built directly for car use, or a special type of marine motor patterned closely after the car type, the all-powerful influence of the automobile being evident on every hand. The steering gear is in most cases the standard automobile wheel mounted on its raking shaft, as though taken directly from some car, and the seats are patterned as closely as possible after those of an automobile.

PANORAMIC VIEWS OF THE TANK AND POWER BOAT DISPLAYS TAKEN FROM THE SOUTH

There are many sound technical and practical reasons for the incorporation of details of car practice in the modern launch, but at the same time there is evident such a strong predominance of car design coupled with an ignorance of nautical matters that it would be no surprise to see real Roi-des-Belge bodies advertised as special features of racing launches. The triumph of the automobile builder over the horse, the carriage builders and the old-time engineers has been so complete and so instantaneous that he is perhaps to be pardoned for his belief that a like triumph can be scored on the water by the sole means of a car motor, a horizontal

BALCONY OF MADISON SQUARE GARDEN DURING THE TENTH ANNUAL SPORTSMEN'S SHOW.

wheel and a few "individual seats"; but it will take much more than this combination to produce a thoroughly practical and sensible launch of moderately high speed and at the same time possessing the essentials of seaworthiness, safety and comfort in ordinary use. Just now there is apparent a tendency to useless if not dangerous features in design and fittings.

So much has been said in print of late about the Smith & Mabley launch *Vingt-et-Un* that this boat is naturally a conspicuous feature, attracting the attention of all visitors. She is shown afloat and at times under way at such a speed as is possible within the very narrow limits. She has been so well described in THE AUTOMOBILE that no further mention is called for here. Next week a more detailed description will be given of all the launches and motors. The S. & M. space is handsomely furnished, and decorated with flags, photos of cars, lamps, etc. A handsomely finished model of a speed launch from which a 30-mile speed is expected is shown, the work of C. H. Crane, of Tams, Lemoine & Crane, who are designing all the S. & M. launches. There is also shown the design of the Gold Automobile Challenge Trophy prepared by Tiffany & Co. for the match between the S. & M. and the F. I. A. T. launches next summer.

The Gas Engine & Power Co. and Charles L. Seabury & Co., makers of the Speedway launches, have an interesting exhibit, including the good old "naththa launch" which first made the launch a fact instead of a theory. One of the standard "naphtha" engines is shown in company with two of the latest types of high-speed launch motors, while two of the launches of the old type, one the regular 21-foot open launch, the other a handsomely modeled open dinghy, are shown, the dinghy being in the tank, under power. The principal feature of the exhibit is a mahogany speed launch, *Queen*, 32 feet 6 inches over all and 4 feet 10 inches wide, with clean lines and a very fine external finish. The motor is also new and demands a more lengthy description than is now possible. It is placed well forward, leaving a small cockpit for the helmsman, in which is placed a big, leather-covered, pivoted office chair. There is a good cockpit abaft the motor, with room for four to six persons, but this also is fitted with the same armchairs. The steering is by an automobile wheel.

Last year the Standard Motor Construction Company brought out the first launch of the new type with really light construction, the well-known *Standard*, the hull following closely the Normand models. During the winter the company has been preparing to test a different type of model, that of the little launch *Dolphin*, designed by E. W. Graef, after the "double-wedge" theory that has frequently been exploited both here and abroad. The new boat, *Dolphin II*, is now seen for the first time, having just been completed by the Huntington Boat Company of New Rochelle. The hull is a handsome piece of work, double-skin mahogany with decks of planished copper; it is 31 feet over all and 4 feet 6 inches wide. The motor has already been described in THE AUTOMOBILE, being identical with that shown in a car at the Automobile Show; four-cylinder, 20-horsepower, making 900 revolutions; the cylinders supported on steel rods rising from an open baseplate. The motor is forward, with space for the helmsman at this auto-wheel just abaft it; further aft is a cockpit for four or five persons. Whether through the choice of the makers or the necessities of the model, there being no depth of hull aft, the cockpit has a high floor, about at

the waterline, covered with rugs, the passengers being seated on low cushions. This arrangement is a far better one for so small a craft than the fashionable one of big arm chairs loose in the cockpit and raising the weight of the passengers high above the water.

The Standard space is fitted with heavy davits, on which the *Dolphin* may be hoisted if necessary to show her planking. The six-cylinder motor of the launch *Standard* is shown operated by compressed air, also the regular type of motor in the 20 and 15 horsepower sizes; these latter demanding a further mention. A glass case contains the prizes won by the *Standard* last season.

The Hollander & Tangeman exhibit has for its central feature an entirely new launch designed and built by the Electric Launch Company of Bayonne. The stand is attractively furnished and the design of the gold trophy is shown. The launch is 35 feet over all, 5 feet 6 inches in breadth, and draws 8 inches; it is planked with an inner skin of elm and an outer of mahogany, the total thickness being 1-4 inch. The sides tumble home into the deck, in a continuous turtle-back from stem to transom. The motor is of course a F. I. A. T., of 24-30 horsepower, placed forward. The cockpit is fitted with light seats, mahogany frames with cane centers. The finish of the hull is very handsome.

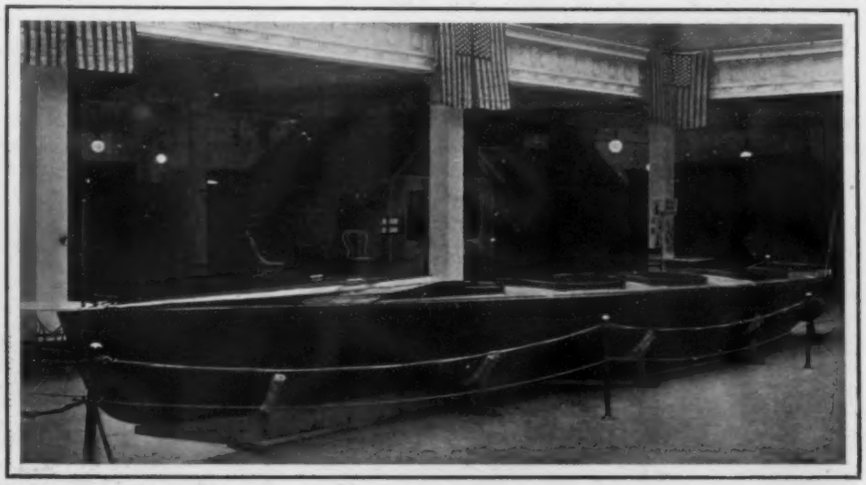
The Panhard motor is shown by A. Massenat of New York, the hull being designed and built by the Electric Launch Company, similar to the F. I. A. T., but 31 feet over all. The motor is the new 15-horsepower 1904 Panhard, with Krebs carbureter.

While the new speed launches are naturally the first attraction, the ordinary yachtsman and launch user who cares for comfort rather than exceptional speed, will find much to interest him in the wide assortment of launches and motors shown by the Lozier Motor Company, the Western Launch and Engine Company, the Electric Launch Company, the Chas. A. Strelinger Company, the Lackawanna Motor Company, the Eagle Bicycle Manufacturing Company, the Isham Company, and others.

It is practically settled that the auto boats *Vingt-et-Un* and the *F. I. A. T.* will race at Larchmont during June.

The C. F. Herreshoff Speed Launch.

There is now on exhibition at the Herald Square Exhibition Hall, where it will remain for some days, a very handsome specimen of launch building—the speed launch designed by C. F. Herreshoff for Frank Croker. The boat was built to the order of Alexander Fischer, American representative of the Rochet-Schneider cars, who will equip her with two 24-horsepower motors of that make. It is reported that she will be entered in the Monaco races this spring, and in the later races in this country.



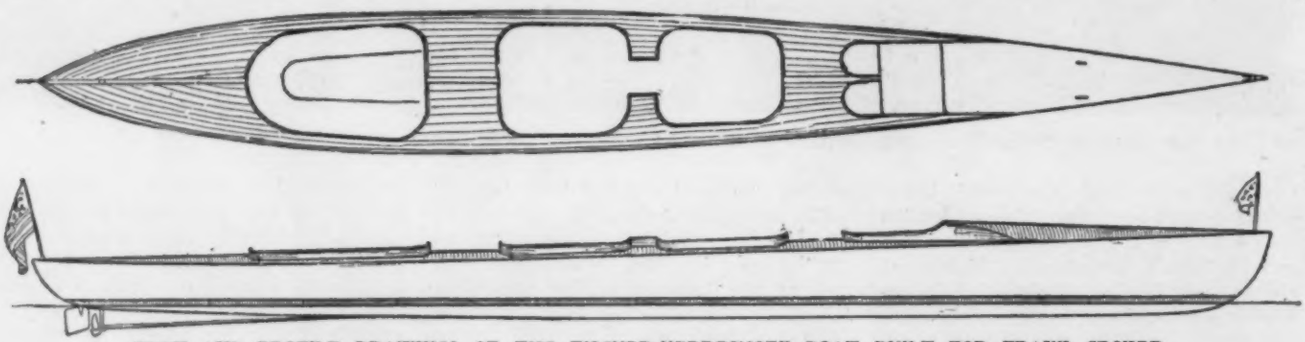
FISCHER-HERRESHOFF SPEED LAUNCH, ON EXHIBITION AT HERALD SQUARE HALL.

The dimensions are, length over all, 43 feet; load waterline, 40 feet; breadth, extreme, 5 feet; breadth at waterline, 4 feet; draft of hull, 6 inches. The model is very different from the prevailing type of speed launch and resembles closely the fast steam launches *Scout* and *Mirage* built by the Herreshoff Manufacturing Company three years ago. The stem has a moderate rake forward and the stern is pointed, of the whaleboat type, with about 20 inches of overhang, instead of the usual cutaway "torpedo" stern. There is a good freeboard forward and the whole form, both above and below water, is fair and shapely, showing careful work on the drawing board.

The underwater body is peculiar in showing no flat or hollow aft but a flat or rounding V form from end to end, the after half of the load waterline being very fine and ending in a point, like the fore end. The bow is long and very fine at the fore end, with some flare near the deck. The underwater body gives an impression of none too much displacement.

The hull was not built by the Herreshoff Manufacturing Company of Bristol, Rhode Island, as quite generally stated, but by the Chase Pulley Company of Providence; a venture in a new line. Certainly no fault is to be found with the workmanship, either in fairness of form or in mechanical finish. Although shining with fresh varnish, the hull shows no such imperfections of lumps and hollows as are so frequently seen in very narrow boats of light construction, but is fair from end to end.

The planking is double, an inner skin of 3-16 inch cedar and an outer of 3-16 inch mahogany, both laid fore-and-aft. The frames are of bent oak, 1-2 inch by 1-2 inch, spaced 6 inches on centers abreast the engines and double that distance forward and aft. The floors are merely light bent frames of oak. The plankshears are of mahogany, with white pine decks; the forward deck is turtle-backed, of mahogany. The planking is fastened to the frames with brass screws. The engine



PLAN AND PROFILE DRAWINGS OF THE FISCHER-HERRESHOFF BOAT BUILT FOR FRANK CROKER.

keelsons are exceptionally light; the starboard engine is placed forward in one cockpit, the port one aft, in another cockpit, each on one side of the center line.

Along the keel is a strip of oak about 10 feet long, 1 1-8 by 1 1-4 inches; on this are oak posts about 1 1-8 inches square and 6 inches long, and these in turn are capped by another oak longitudinal about 1 1-8 by 2 inches; bolts of 1-4 inch iron beside each post join the top and bottom members. This light structure carries the inboard side of each engine bed-plate, the outboard side resting on similar light framing along each bilge. A few very light knees are used, but the whole foundation is very light for engines which are estimated at anywhere from 50 to 75 horsepower.

The steering cockpit is well forward and is peculiarly arranged. There are two small "individual seats," side by side as in a motor car, the starboard one for the helmsman. The man who is to steer this boat at a speed stated to be 29 miles an hour, instead of standing in the center with plenty of elbow room, is crowded into a small space on one side. The after cockpit will seat at least half a dozen persons, though such a load would probably throw the boat out of trim.

The boat will prove a very interesting and instructive experiment and should she prove a success she will be a puzzle to the many who are looking to an entirely different type of afterbody for high speed. As she stands, in general fairness of form she is a credit to her designer and builders.

Manhasset Bay, on Long Island, will have a measured mile course for motor boat trials this summer.

An Interesting Canadian Boat.

An open launch of the torpedo boat type in which carrying capacity has not been sacrificed to abnormal speed is shown in the accompanying drawings. It is under construction by the Canada Launch Works, Ltd., of Toronto to the order of an English customer.

The dimensions are: length on water line, 30 feet; breadth on water line, 5 feet; freeboard at bow, 2 feet 6 inches; freeboard at stern, 12 inches; draft to propeller tips, 2 feet 9 inches. The data for freeboard and draft are based on a load of 1,200 pounds.

Timber is the material of hull construction throughout. Oak is used for the keel, stem, sternpost, deadwood and frames, the latter steam bent, 7-8 inch by 5-8 inch, and spaced 5 inch centers. Other structural timbers are of white oak and the planking is clear cypress.

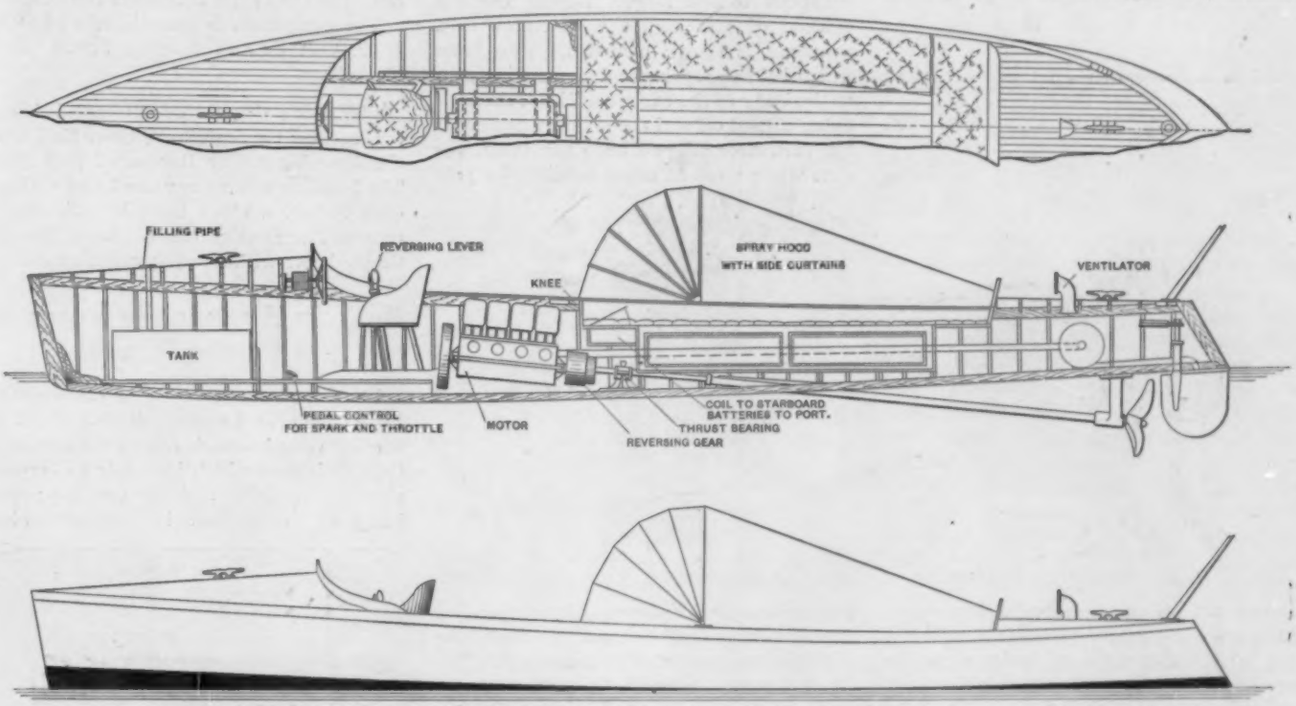
The power equipment consists of a 25-horsepower four-cylinder, four-cycle Reutenber gasoline engine, located immediately forward of amidships, and turning a 26-inch solid three-bladed propeller. The propeller shaft is given a considerable downward rake, as will be seen in the longitudinal section, and the outboard bearing is carried on a stiff bracket. The motor cylinders are 5 inch diameter and 6 inch stroke. Reversing is accomplished by a set of incased gears at the shaft coupling, just forward of the thrust bearing. A circulating pump is fitted with suction connections leading both to the bilge and overboard, so that the boat can be readily cleared of water should occasion arise when under way or stopped with the motor running. Two sets of batteries and suitable switches are fitted for ignition. Fuel supply is carried in a 25 gallon iron tank located in the forward end, with filling pipe rising to the top of the turtle back.

This boat has quite a smart appearance in the water, suggestive of naval practice, rather than of conventional pleasure boat design. The stem has a backward rake—what is known in ship building circles as a "cowardly bow"—so that the tendency of the water to climb over the bow when the boat is pushed at speed, is largely neutralized. For a boat of this length it has a considerable sheer, not pleasing to all eyes, as it gives a rather sagged appearance. The boat is turtle backed with a breakwater flaring to the sides at the forward end of the cockpit. Here the usual marine vertical steering wheel is journaled. An individual type seat is fitted between the wheel and the motor for the steersman who also has control of the speed by pedals for spark and throttle and of the forward or backward motion by side reversing lever.

Abaft the engine a cushioned thwart for passengers to face the stern is joined at the side to fore and aft seats, and opposite the thwart seat at the after end of the passenger well. A folding navy launch spray hood with side curtains gives protection from wind and water.

At the stern the floor is flat, the sides curved in, giving the boat pointed ends in plan, and the water line length line carried out beyond the deck, as shown on the sheer plan. A balanced overhung rudder is placed just aft of the propeller.

The builders look for a speed of 15 to 16 miles an hour on the measured mile.



INBOARD, OUTBOARD AND ACCOMMODATION PLANS OF CANADA TORPEDO TYPE AUTO BOAT.

New Separate Gas Generator System.

An advantage possessed by the independent generator type of lamp is the relatively small amount of heat generated by the action of the water on the carbide. There is an enormous affinity between the calcium in the carbide and the oxygen in the water which generates heat. This is harmless if distributed but if localized it leads to the polymerizing of the gas (changing of its atomic weight) which decreases its illuminating power and forms by-products such as oily substances that are carried along with the gas and deposited in the conduits and in the burner. As the orifice of the acetylene burner is very small it is liable to soon become choked sufficiently to retard the flow of gas, causing an uncertain flame which burns with more or less smoke.

The method of employing an independent generator disposed in any convenient place in the automobile is now considered a satisfactory system of lighting. Gas is supplied through small metal or rubber tubes which may be readily concealed between the generator and the lamps. Any style of lamp may be used with the separate generator, either one especially designed or an ordinary oil side lamp, the oil burner being replaced with a gas tip suitably connected with the piping system.

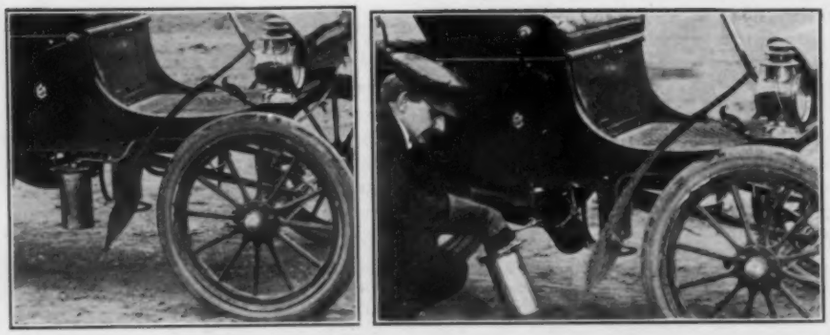
FIG. 1.—INSERTING THE CARTRIDGE.

FIG. 2.—ASSEMBLING THE GENERATOR.

One of the newest applications of the independent generator is the cartridge type, shown in the accompanying illustrations. The dimensions of the generator are 9 1-2 by 6 1-2 inches. The generator is designed to take an hermetically sealed metal cartridge or can of carbide or the device may be used with loose lump carbide, a suitable receptacle being furnished with each outfit for use in case the automobilist finds it convenient to fall back on the commercial package carbide. The cartridges are 4 inches high by 3 1-2 inches in diameter, small enough so that a number may be carried in the tool box of a car.

Fig. 1 shows the method of inserting the cartridge in the generator, and Fig. 2, the manner in which the generator is put together. The used cartridge is removed as shown in Fig. 3. The device is applicable to any type of vehicle from the lightest runabout to the largest touring car. A method of attaching the generator to a runabout is shown herewith. Two bolts which hold the springs of the running gear to the body of the car are utilized, the nuts being turned off and the clamp that carries the generator slipped onto the bolts, the nuts when screwed home holding the generator securely in place. Either metal or rubber tubing may be used to convey the gas from the generator to the lamps. The plant shown comprises a generator and two standard pattern oil side lamps such as are a part of the regular equipment of the machine. The ventilating system has been changed and stop cocks fitted to turn off the gas at the lamps so that either one or two lights may be used as road condition demands. The generation of gas discontinues when the gas is turned off at the lamps, there being practically no after-generation, effecting a considerable saving of carbide. A suitable filter is supplied to extract moisture and fine particles of dirt from the gas before it reaches the burners.

FIG. 3.—REMOVING USED CARTRIDGE.



INDEPENDENT GAS GENERATOR CONVENIENTLY ATTACHED TO RUNABOUT.

The equipment is manufactured by the J. B. Colt Co., 21 Barclay Street, New York City.

Plans for a three-story automobile house for Andrew Carnegie have been filed with the New York City Bureau of Buildings. The building will occupy the lot at 55 East 90th Street, a block from Mr. Carnegie's new residence on Central Park East. The estimated cost, without equipment, is $20,000.

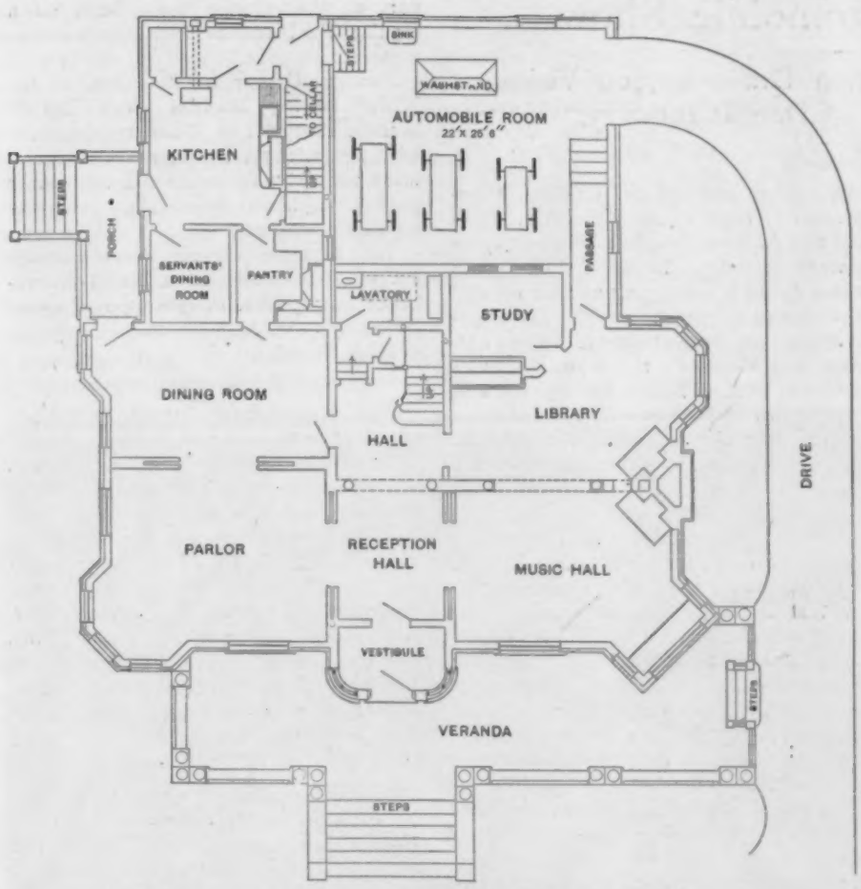
Built-In Automobile Room In a Private House.

The handsome new stone residence of R. E. Olds at Lansing, Mich., which is nearing completion, is one of the first of a type of houses which bids fair to become almost a necessity with the growing popularity of the automobile. In designing this house the owner and architect had in mind the housing of several automobiles in the most accessible and convenient way for the owner.

R. E. OLDS' NEW RESIDENCE, UNFINISHED.

The automobile room, which is on the lot level in the rear of the house, is 22 feet by 25 feet 6 inches. It is reached by car over a macadamized driveway from the street with steps at the veranda for alighting. There are two entrances to the automobile room directly from the house, one being by way of the kitchen and the other from the library through a passage, steps being provided to reach the concrete floor of the automobile room, which is below the first floor level of the house.

A washing stand is provided, with drain



PLAN OF R. E. OLDS' NEW HOUSE, SHOWING AUTOMOBILE ROOM.

and convenient water supply, and ample room is afforded for a work-bench and such tools as are usually found in a private automobile stable.

Suitable provisions are made for steam heating and lighting the room and a pit may be added at small expense. The floor is laid in cement with sufficient grade to afford drainage and to clear the floor of water when a vehicle is run in after exposure to rain or snow.

This arrangement should particularly appeal to owners who take a personal interest in the care of their machines or to users of the closed type of car, entrance and exit being possible without leaving the house. It may be noted that windows are shown on the plan between the study and the automobile room, a consistent detail for an owner as interested in the self-propelled vehicle as is Mr. Olds, vice-president and general manager of the Olds Motor Works.

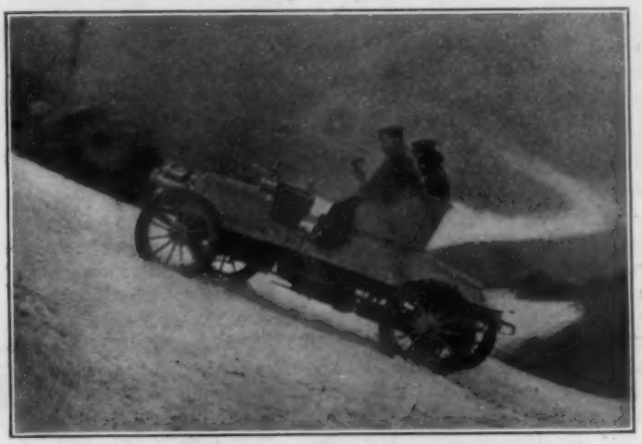
The increase in the rate of fire insurance premium on the dwelling and contents, owing to the necessity of filling tanks in the house, will be considerable, especially if fire protection in the way of a first-class fire department and water system is inadequate, but to the majority of owners of expensive automobiles and fine stone residences, this is almost a negligible factor in view of the great comfort of having the cars under the same roof as the living apartments, particularly in rainy and extremely cold weather.

Mountain Climbing by Auto in Wales.

The latest English automobile papers to reach this side have contained interesting accounts of a recent mountain climbing attempt, made January 27, by Harvey du Cros, Jr., and Charles Sangster. That the picturesque features of such an event may be much enhanced by the way in which it is photographically depicted is conclusively shown in the accompanying illustrations, one of which shows a particularly difficult part of the ascent as presented to the readers of the English journals and the other the same view properly reproduced according to the grade mentioned as the maximum encountered on the trial.

The average gradient of the mountain attempted—Snowden, a peak 3,571 feet high situated in Carnarvon Shire, Wales—is a rise of one foot in seven, with a maximum of one in five. The illustration as shown by our British contemporaries roughly figures a 40 per cent. grade, or a rise of one foot in two and a half, while the other illustration, from the same print but mounted according to the maximum grade mentioned in the English accounts, shows Messrs. duCros and Sangster assailing a grade of 20 per cent. or a rise of one foot in five. Attention is called to the telegraph pole at the left of the two pictures, it being presumed that the usual practice of telegraph companies in setting poles vertically has been followed in building the line up Snowden.

Managers of the Buffalo automobile show are making efforts to induce the Packard Motor Car Co. to exhibit the Gray Wolf at the show, March 6 to 12.



MOUNTAIN CLIMBING AS ILLUSTRATED ABROAD.

SAME FEAT AS IT ACTUALLY OCCURRED.

The Detroit Automobile Show.

Second Annual Tri-State Exhibition Draws 20,000 Visitors—Remarkable Exposition of Detroit Industry.

Special Correspondence.

DETROIT, Feb. 20.—There has never before been so successful an event in Detroit's automobile history as the Tri-State Automobile and Sportsmen's Show which closed tonight in the Light Guard Armory. Most of the exhibits came from the show in Chicago, except of course a large amount of local product which was taken direct from the factories and placed on exhibition. Detroit is the largest gasoline automobile manufacturing city in the country and her claim to precedence in quality as well as in quantity of output was well supported by her exhibit. Fully three-fourths of the display was Detroit production and outside automobile experts pronounced it a showing to be proud of.

In connection with the auto show, there was a dog show, and an exhibit of sporting goods, and the last two nights there was a cat show. The attendance was surprisingly large. Starting with 1,000 people on the opening day, Monday, the attendance jumped to 3,000 the second day, 4,000 the third and held better than this figure the remainder of the week, despite extremely cold weather throughout. It is estimated by the management that there were more than 20,000 visitors during the week.

From a business standpoint the show was a success. Besides the actual orders taken, which represented thousands of dollars, the dealers and manufacturers say that "trade seed" was sown to an extent that will produce a handsome harvest later in the season.

Every inch of floor and gallery space was utilized for the exhibit. The booths were ranged along the side walls and in the floor center, moderate sized aisles being left for passageway. These were crowded to the limit in the evenings when the rush was on.

COMPLETE LINE OF OLDS VEHICLES.

One of the finest exhibits was that of the Olds Motor Works, which showed its light touring car with and without rear tonneau seats, the touring runabout, the delivery wagon, the railroad inspection car and the standard curved dash runabout. A large number of orders for all these were taken. John L. Poole, foreign representative of the firm, who was in charge of the booth, reported that the delivery wagons and railroad inspection cars are having a large foreign sale, orders being filled right along for Russia, Buenos Ayres, Cape Town, Denmark, France and other parts of the world.

DEALER'S DIVERSIFIED DISPLAY.

The exhibit of William E. Metzger, Detroit's largest dealer, was by far the largest in the show, occupying one entire side of the building and part of a second side with two separate booths elsewhere. His exhibit included the Cadillac, Pope-Waverley, Pope-Toledo, Columbia, Packard and Autocar, besides a booth of Exide storage batteries. In the Cadillac booth was a model B touring car and surrey, and a chassis of the former model. The Pope-Waverley department showed a town carriage and a doctor's stanhope, the latter equipped with an Edison battery, the first ever shown in Detroit. In the Columbia section was the rear-boot Victoria, the Elberon Victoria, and the new Mark XL runabout. Much interest centered in the Packard exhibit, which included the Gray Wolf racer, holder of the world's record of 46 2-5 seconds for the light cars. A chassis of the Gray Wolf and the latest Voiture Legere, or light touring car, were also displayed.

The Autocar touring car and chassis, the Autocar runabout and the big Toledo 24-horsepower touring car with pressed steel tonneau, completed the Metzger exhibit, with the exception of a display of Cleveland, Tribune and other bicycles.

Another Detroit dealer to exhibit a large line was J. P. Schneider, who had a handsome display of Peerless, Thomas and Northern cars. One of the most interesting was the Peerless 24-horsepower, with limousine body. There was also a 24-horsepower chassis, which had a collision with a street car when coming to the show, demoralizing the street car. L. J. Sackett of the Peerless factory was in charge. Mr. Schneider also showed the Thomas three-cylinder touring car and a Thomas chassis. Calvin T. Paxon, the Thomas company's manager, was in charge.

FORD AIR-COOLED CAR.

Henry Ford exhibited for the first time his new four-cylinder air-cooled car which has some original and novel features. The engine is of the vertical type, the cylinders measuring 3 3-4 x 4 1-2, the whole of the motor being inclosed in an attractive hood. Each cylinder is flanged and cooled by air suction. The four cylinders are covered on every side except the front, by housing of aluminum and the air is drawn by suction to a fan in the flywheel at the back. Every part of the motor is automatically oiled. The transmission is of planetary gear type in line with the engine, and the bevel gear drive is connected by a universal coupling.

The tonneau is large and roomy with a door at the side giving easy entrance and adding to the attractive appearance of the car. Mr. Ford states the engine will develop 15 horsepower, while the total weight of the car is under 1,300 pounds.

Another feature of the Ford exhibit was a handsome closed coupé, the upper part of the carriage being built on a regular Ford chassis with the tonneau removed.

Manager George L. Robinson, of the White Sewing Machine Co.'s Detroit branch, showed two White touring cars, with and without the tonneau. He also had a car with a limousine body, the upper part of which was removable, leaving the regular touring car.

The Hammer-Sommer Auto Carriage Co. of Detroit showed a Model D, 12-brake horsepower, double-opposed cylinder touring car, the exhibit being in charge of H. A. Sommer.

ONE FOREIGN MACHINE.

W. A. Russell & Co., Detroit dealers, had one of the handsomest exhibits in the show, displaying a beautiful blue Darracq, of 30-horsepower and a chassis. Besides these was shown the Winton 24-horsepower touring car and a Woods electric brougham.

W. H. Webber, a Detroit dealer, had a fine exhibit of Ramblers, including the Model H light touring car, single cylinder, 7-horsepower; Model L, touring car, double-opposed cylinder, 16-horsepower; Model E runabout, single cylinder, 7-horsepower; Type 1 delivery wagon, single cylinder, 7-horsepower, and an Orient buckboard.

SOME NEW DETROIT CARS.

One of the newest machines out, the Pungs-Finch touring car, was shown nearby. This is a four-cylinder car built by the Sintz Gas Engine Co. of Detroit. Another new machine shown for the first time was the Little Four, by McLachlan & Brown of Detroit. The engine is of three-cylinder, single acting type, from 6 to 8 horsepower.

The Reliance Automobile Co., organized two weeks ago in Detroit, showed the Reliance touring car, with 15-horsepower, double-opposed cylinder motor and King of the Belgians body, the distinguishing feature of which was a side entrance. W. F. Doyle was in charge.

Roger J. Sullivan showed the Wayne touring car, made by the Wayne Automobile Co. of Detroit. Two cars were on view, a single cylinder, 9 1-2 horsepower and a double cylinder 16-horsepower machine. The Wheeler Mfg. Co. of Detroit had one of its Detroit touring cars on view.

The chainless Wolverine touring car of the Reid Mfg. Co. of Detroit attracted much attention, and the Haynes-Apperson runabout, runabout chassis and surrey were greatly admired.

In the booth of the Commercial Vehicle Co. of Detroit was shown one of the company's 600-pound 1 1-4 horsepower electric runabouts. A big electric four-motor 'bus, to be used on Detroit's streets and parkways in the summer, stood outside the Armory in the street, all the company's big motor wagons being too large to get into the building.

The exhibit of the Marr Auto Car Co., was in charge of Charles Ternes, of De-

troit, and consisted of two 6 1-2 horsepower runabouts of handsome design. Young & Miller of Detroit exhibited the Elmore two-cycle car, made at Clyde, O. The Schug Electric Mfg. Co. and the Reliance Gas Engine Co. of Detroit, had their exhibits side by side, showing marine and automobile engines. Both firms showed spark plugs. Other spark plug and igniter exhibitors were the Bullock-Beresford Mfg. Co. of Cleveland and the Dayton Electrical Mfg. Co.

LAUNCHES AND MARINE ENGINES.

The marine engine section of the show was excellent. L. C. Steers, of Detroit, general agent for the Fay & Bowen Engine Co. of Auburn, N. Y., and the Matthews Boat Co. of Bascom, O., had three engines on view and a 21-foot Matthews torpedo launch. Mr. Steers also showed an automatic electric lighting machine for small launches. The Truscott yachts, launches and engines were shown by A. L. Melvin of Detroit, the exhibit containing a handsome launch, two canoes and the regular type launch engine.

The Detroit Canoe & Oar Works had a fine line of canoes of all kinds.

THE SUNDRIES DISPLAYS.

The Twentieth Century Mfg. Co. of New York showed a big line of lamps, horns and general automobile accessories. The Automobile Equipment Co. of Detroit had a special display of the Rushmore electric searchlight and showed in addition a general line of appurtenances. The Rose Mfg. Co. of Philadelphia made a fine display of Neverout motor vehicle lamps. Wheels of all sizes and of latest pattern were shown by the Imperial Wheel Co. of Flint and Jackson, Mich. The Badger Brass Mfg. Co. of Kenosha made a handsome exhibit of Solar lamps and the Monnier Cycle Supply Co. of New York had several novelties in the line of automobile equipment. The Veeder Mfg. Co. of Hartford, Conn., showed its line of cyclometers, speedometers and fine castings, and C. F. Splitdorf of New York made a feature of jump spark coils. Emil Grossman of New York showed tires, lamps, and general equipment.

DETROIT SPORTSMEN'S AND AUTOMOBILE SHOW, LIGHT GUARD ARMORY, SHOWING EXHIBITS IN GALLERY.

AUTOMOBILE SIGHT-SEEING SERVICE FOR MINNEAPOLIS.

Special Correspondence.

MINNEAPOLIS, Feb. 20.—The establishment of an automobile sight-seeing service in this city has been decided upon by the Minneapolis *Journal*. An order for several twelve-passenger coaches has already been placed and it is expected that they will be delivered by the time this winter's snow has finally disappeared. Some of these coaches will make regular tours over specified routes through the industrial and business sections of the Flour City, starting from the *Journal* office, while others will be reserved to take parties for a circuit of the extensive boulevard and park system.

Harry W. Jones, a member of the park board who attended the Chicago show, returned with a similar idea. He proposes that the city procure large sight-seeing automobiles to make tours of the park system. A regular twenty-mile circuit could be made past Lakes Calhoun and Harriet, thence to Minnehaha Falls, and from there to the State University, over the boulevard which will this year be built along the west bluff of the Mississippi River, and which will be one of the most beautiful drives in the country. The boulevard along the river bank will be four miles long on the west side, and two miles on the east side.

There are about 250 automobiles in use in Hartford, Conn.

Hints for Buyers of Gasoline Cars.—IV.

Wheels, Running Gears and Steering Mechanism Discussed for the Benefit of the Prospective Buyer.

By RENE M. PETARD

Wheels.

There is very little to be said in a study of this kind on the subject of wheels, as there is not much difference between the several types of wheels now found in the market. The old quarrel of the wood wheel *vs.* the wire and tubular wheels has apparently been settled, partly at least.

The wire wheel has practically disappeared from the market, and is to be found only on the light racing cars and electric runabouts, where the saving in weight is the most important consideration. The competition is now between the wood artillery wheel and the tubular steel wheel; both have their advocates and the fight is keen; it appears that the wooden wheel, used almost exclusively abroad, has still the favor of most American manufacturers, while the number of tubular steel wheels seem to have increased largely during the past year. This is probably on account of the great progress made in its construction and design. The old argument against the steel wheel, that a roadside repair was impossible, while any wagon-builder, easily found in any country town, could repair temporarily an artillery wheel, has been forgotten, as the small wagon maker who will decently fix up a wood automobile wheel is still to be found. Experience has taught that whenever an accident happens in which any of the wheels is so badly damaged as to prevent further driving, there is no possibility of repairing the wheel on the roadside; the only steps to be taken are to give up the ride and have a new wheel sent and fitted at a later date. This is true of any type of wheel, even with the wire wheel in most cases.

There are, however, a few considerations which it might be well to bring out. It has been a practice in horse-drawn vehicles to give dish and camber to the wheels; that is to set the spokes in the hub rim at a certain angle to the axle, and to set the ends of the latter at a certain angle to the horizontal. These dispositions are intended to better resist the lateral and vertical pressure on the wheels and should always be found in heavy or high speed vehicles, although the use of pneumatic tires reduces the necessity for these dispositions. In the sketch herewith, the angle *a* represents the dish of the wheel and the angle *e* the camber. A disposition which has been found most satisfactory in the design of automobile front wheels was to give the wheel a very slight dishing, of two or three degrees, and to give the axle exactly the same camber, thus having the spoke under the hub upon which rests the weight of the car, perfectly vertical. In no case, however should the camber be greater than the dishing, as this disposition would weaken the wheel instead of strengthening it.

It was to be noticed at the Madison Square Garden show that on most American as well as foreign double-chain-driven cars the rear wheels had no dish or camber whatever, but were of much stronger design than the front wheels. This is owing to the difficulty encountered in the designing of a chain drive that will work satisfactorily with dished wheels. If the springs are sufficiently resilient and the tires of fair size a perfectly flat and vertical driving wheel is much to be preferred.

The use of ball bearings in the front wheel hubs is almost universal, while quite

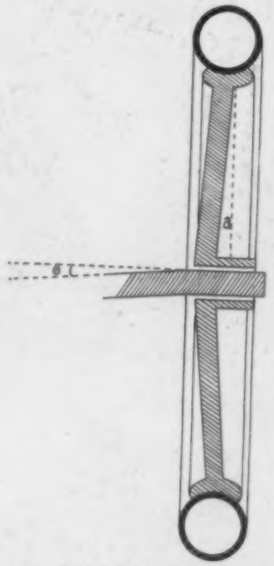


FIG. 1.—DISH AND CAMBER OF WHEEL.

a number of makers use roller bearings at the rear. The roller bearing may not be quite as frictionless as the ball bearing, but it is much better as to wearing qualities on low-priced cars. The ball bearings, to be absolutely satisfactory, require great skill in hardening and grinding, while a cheaper grade of roller bearing will do its work satisfactorily even under bad conditions of wear.

Running Gears.

The qualities required in the running gears of the different types of cars vary greatly with the weight or power and the speed of the vehicle. As a rule light machines, such as runabouts, are found to have rather flexible running gears, in most cases the entire power plant being very compactly set up on a false frame. In the heavier types of cars on the contrary, the chassis are noticeable for their almost absolute rigidity.

Pressed steel frames are coming greatly into favor for medium weight and heavy cars, and even a few very light runabouts are to be found fitted with such frames. It will be noticed, however, that in many instances angle iron frames are used on light low-priced cars. There is no serious objection to the use of this type of frame in a car of this kind, as for low powered cars they are not very much heavier than any other type, and at equal weight are much stronger than a tubular frame and as they are almost the cheapest kind of frame to build, they allow the manufacturer to spend more money on the more delicate parts of the machinery. Armored wood frames were not shown on many American machines at the last New York show, although they are still in great favor abroad, where the angle steel frame is practically unknown. Wooden frames should be made of perfectly seasoned hard wood and care should be taken in the connections between the wood and iron to allow for the difference in expansion under varying atmospheric conditions. This difference is much smaller with the hard woods than with the soft.

French makers have reached a high stage of perfection in the design of these frames, and it is the writer's belief that for the average car, they are the best type of frame as they are light, strong, and have a certain amount of resiliency, which, although too slight to impair the satisfactory working of the machinery, gives very smooth riding qualities to the vehicle. Some frames are made combining wood and steel tubing, they have no advantage whatever over the regular armored wooden frame and have much less elasticity

Beautiful samples of ingenuity and workmanship were shown at Madison Square in the line of pressed steel frames, both on complete machines and in the booths of special manufacturers; the one-piece Darracq frame causing a great deal of comment. It seems, however, that these frames are still too expensive, when well made, to be used on low-priced machines.

There is a tendency towards discarding the false or sub-frame carrying the machinery and to make the arms carrying the motor, change-speed, and other parts long enough to be fastened direct to the side members, thus saving weight and complication and increasing largely the strength of the frame.

Double elliptic springs are rapidly going out of fashion, to be replaced by semi-elliptic springs, carried well outside of the body. These springs are just as elastic as the full elliptic and are better able to stand side strains.

The three-point suspension, either forward or at the rear, seems to be gaining many adherents, and this is not to be wondered at, considering its great flexibility The three-points suspension, when

obtained by replacing the two usual side springs by a single spring in front in the vertical plane of the axle, necessitates the use of reaches to keep the front axle from giving way under the driving strain of the machine, while the absence of reaches connecting the frame and the front axle had always been combined as a marked point of simplicity in design. When reaches or tension rods are used to steady the axles the buyer should see that they are of as great a length as the general design of the car will allow, and of ample strength to withstand driving strains.

While on the subject of running gears it might be well to touch the question of the center of gravity. In all cases this point should be as low as possible, to increase the steadiness of the vehicle on sharp curves. It seems to be the practice in the latest cars to place this center well in the middle of the car when ordinary touring cars of medium power and weight or light runabouts are considered. Too heavy a load on the front wheels will increase the effort for steering and lessen the grip of the rear driving wheels on the ground, while it will in some cases reduce the chances of skidding. On the other hand, too heavy a load on the rear wheels will cause premature wear of the tires and, decreasing the hold of the front wheels on the ground, will cause a certain amount of unsteadiness in the steering. It is well to remember, however, that the higher powered the car is the farther front the center of gravity should be found, and this for the following reasons: First. The increased driving power added to the increased weight will soon put out of use the best kind of tires. Second. The very effort of driving causes internal reactions increasing in intensity as the speed of the car increases, which cause a virtual displacement of the center of gravity, increasing the load on the rear axle and relieving the front wheels, the putting of greater weight in front being the only way of balancing these reactions. It has been found that the lighter the unsuspended parts of the car are, the smaller are the chances of skidding and the less the wear and tear on the tires; so it will be seen that too heavy axles, especially in the case of live rear axles, are objectionable; and in this particular the double-chain-driven car has an unquestioned-advantage over the bevel gear drive. This is no doubt one of the reasons, besides the excessive weight and cost, why the live shaft transmission is not to be found on the heaviest or higher powered types of machines.

Steering Apparatus.

Before coming to a few general considerations which will close this study, a few details of the steering apparatus should be noted.

This part of the car is the one in which accidents are most to be feared, as in no other part of the machine can a breakdown bring such terrible results. Consequently the buyer of a machine should never fail to look this part over most carefully while studying the machine which he expects to purchase. None of the levers and rods of this mechanism should be frail and it is about the only part of the car where a good deal of cutting down of weight cannot be done without positive danger. There are a great many different systems of steering devices in the market, although they all can be classified under a few well defined types. First of all, two classes can be made: the ordinary or simple lever type and the irreversible steering gears. In the ordinary lever type first to appear on the market the connection between the wheels and the steering handle is simple; that is, the front wheel can be made to turn around its steering pivot thus causing the steering post to turn, or the steering post can be actuated, causing the wheel to turn. It will readily be seen that in this type a stone, a hole, the curb, or any obstacle may cause the wheel to change its direction, thus deflecting the car from its course unless the driver holds firmly to his tiller or steering wheel. Such a steering apparatus may be dangerous on heavy roads, and tiresome under all conditions. To obviate this defect, the irreversible steering gears have been brought out. In these devices the motion of the wheel in the driver's hands can be transmitted to the road wheel without any more effort than in the other type, while no motion can take place in the wheel under outside influences, thus relieving the operator from the greater part of the driving strain.

The two most usual systems of irreversible steering gears are the worm and sector and the screw and nut forms. The first consists of a worm secured to the steering post which meshes with a toothed sector carrying an arm actuating the wheels through suitable rods. In the screw and nut system a large, quick-pitch screw keyed to the steering post and revolving with it raises or lowers a nut attached to a bell-crank lever connected to the wheel in the same way as in the worm and sector type. The greatest drawback to the use of irreversible devices is the play which takes place in them after steady use. It is easily understood that especially in the sector type the continual friction of the teeth against the worm and the heavy shocks from the road which this part of the gear is designed to resist, soon wear the teeth of the sector and allow it to play in the threads of the worm. This play is considerably amplified by the disposition of the levers, and it soon causes excessive looseness of the road wheels and unsatisfactory steering. In the screw and nut system where the surfaces are larger the wear will not take place so rapidly, although after long usage play will be found to a certain extent. Many taking-up devices have been suggested by which a steady running could be obtained, but as they are seldom to be found in new cars and are contrivances adopted by the user and generally of his own invention, they do not come within the scope of the present study.

A clever disposition to be found on one of the American cars at the show which had been a distinctive feature of a French car well known in the last few months, is the use of worm with concave surface in a worm and sector type of steering apparatus. In this type of worm the thread instead of being cut on the outside of a cylinder, as is usual, in which case it meshes fully with one tooth only of the sector, is cut on a curved solid so that several teeth of the sector are fully in mesh with the thread of the worm, thus increasing the friction surface and decreasing the wear.

It has been a practice almost universally adopted in automobile designing for the past two years to make the joints of the steering gear connecting rods of the ball and socket type. This form presents large

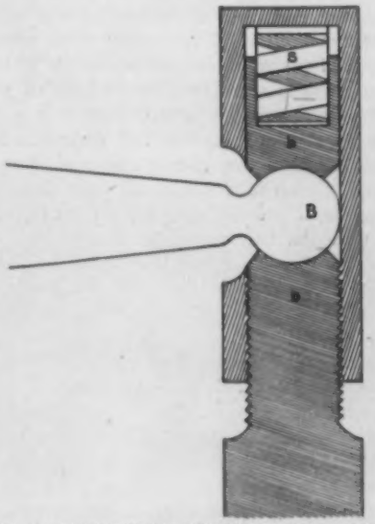


FIG. 2.—UNIVERSAL STEERING ROD JOINT.

advantages over the formerly used system of uniting the flattened ends of the levers by means of a bolt and nut. In the ball and socket system one end of the lever is turned to the shape of a ball, *B*, Fig. 2. Two jaws, *c* and *b*, forming a spherical cavity, are pressed against the ball *B* and are cut one in the end of the connecting rod, the other in a separate part fastened to the lever by suitable means. A spring, *S*, is generally placed behind this last piece and allows of strong shocks from the road to be taken up to a certain extent, thus saving the more delicate parts of the gear, such as the sector or worm. A similar device existing at the other end of the rod, working in the opposite direction, shocks are taken up in both directions.

At the show there was to be found beside steering gears belonging to the types above mentioned, a special system of steering apparatus or more properly steering check. It was adopted on the Knox air-cooled cars and seems to be most satisfactory. It consists of a vane moving within a box containing glycerine. The vane fits tightly against the sides of the box and is

actuated from the steering post, being also connected by the connecting rod to the roadwheels. The displacement of the vane inside of its box causes the glycerine to flow from one side of the vane to the other through suitable valves. These valves can only be put in operation when the steering wheel or lever is turned by the driver and cannot be actuated by the influence of the connecting rod, thus demobilising the vane in the glycerine and locking the check. There cannot be lost motion in such a check, and provided that sufficient provision is made to avoid leakage of the glycerine it ought to be perfectly satisfactory.

Before closing this subject, it should be pointed out that the connecting rod between the steering apparatus itself and the road wheels should be as long as possible since under shocks the play of the springs which takes place in a vertical plane is not followed exactly by the end of this rod which moves on a circle having the other end for center, thus giving with every shock of the road a slight deviation of the road wheels entirely independent of the steering apparatus, which increases with the extent of play of the springs. No satisfactory means to overcome this action has yet been found, and the only thing to be done at present is to reduce it as much as possible, this result being obtained by making the connecting rod of the greatest possible length.

General Considerations.

The following few hints which could not be placed in any of the foregoing subdivisions may be of interest.

The almost entire disappearance from the automobile trade of the single-tube tire was noticeable at the show. This type which has never been used abroad to any extent has proved to be far from satisfactory for automobile work unless of such a high quality of material and workmanship that its advantage in price over the clincher or detachable tires would disappear entirely.

It seems that large improvements might be made in starting crank construction although it appears that no steps have been taken in this direction for the last two or three years. So far as the writer knows, but one French and one American concern has incorporated in their starting crank constructions, a device similar to the ordinary bicycle free wheel, allowing the motor to be started from any preferred position of the crank instead of the usual pin and notch construction, allowing only one or two positions of the crank on the shaft, which is sometimes most annoying when the motor does not stop at such a point that the pin will be in a convenient position.

To buyers wishing the maximum of convenience in the operation of their cars, the tilting steering post for light cars to be subject to constant use, is to be recommended, as it allows of changing the position of the steering column without interfering with the driving, thereby resting the arms. For heavy touring cars or vehicles of hard duty, these devices, unless constructed with great care, are not to be strongly recommended since they may weaken somewhat the stiffness of the steering apparatus. A tilting steering wheel substantially built, although not presenting all the advantages of the tilting post, as far as comfort in driving is concerned, will be found much more convenient than the ordinary type, as it will allow of entering the car from either side, which will be especially appreciated when the car is stopped alongside of the right curb of the street, as otherwise one would have to step into the street to mount the car.

Before closing this study, which it is hoped will have proved useful to a few in helping them to decide upon the type of car which they wish to purchase, attention should be directed to the immense improvement in construction made during the past year in this country. It can truly be said that, except for the most expensive types of cars, which appeal only to a minority of buyers, the standard of construction in the United States is just as good as in any country abroad, and there is no doubt that America will lead the world next year in the line of inexpensive all-round cars.

(Concluded.)

Motor Attachment for Small Lawn Mowers.

A light motor lawn mower possessing novel features has been patented by Isaac H. Davis, vice-president of the Crest Mfg. Co. The power mowers now in the market are large steam affairs which, while well adapted for use on large estates, golf links and extensive grounds, are too costly for limited areas and private lawns. The Davis invention is designed to provide a small, inexpensive power mower that can be used under the same conditions of service as the familiar hand-push lawn mower to which, in one form, the motor and driving mechanism may be attached.

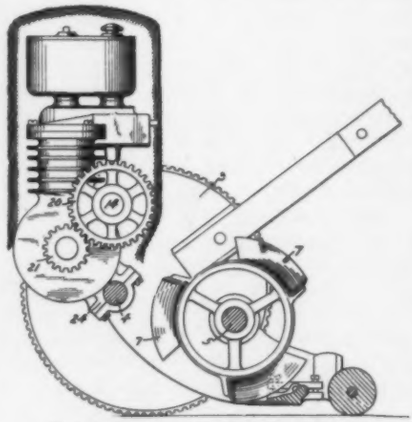


FIG. 2.—END VIEW OF MOWER.

A rear view of the mower is shown in Fig. 1, the small air-cooled, single cylinder motor being so placed that it receives a blast of air from the revolving blades, 7. The motor is mounted on the tie rod 4, by means of the clamping bracket 24, one-half of which is cast integral with the motor crankcase. The speed reduction is obtained by means of the gears 21 and 20, the former keyed to the crankshaft. The secondary shaft, 14, is fitted with a cam, 19, to actuate the exhaust valve of the motor and is housed in a casing, 8, which is securely attached to the crankcase casting. A cone clutch, 13, actuated by a lever, 12, is provided for throwing the motor in and out of gear with the flexible spring shaft, 10, which carries at its outer end a pinion, 9, meshing with the internal gear of the driving wheel, 1.

In order to protect the gilled cylinder and its parts from the flying grass, a cylindrical screen of fine mesh wire netting is placed around the motor. The motor and driving mechanism may be applied to the existing type of lawn mower by tapping a hole in the frame-plate, 3, for the tubular casing of the flexible shaft, inserting the pinion, 9, within the driving wheel and clamping the motor to the tie rod, 4. If it is desired to disconnect the power drive at any time the operator may do so by throwing the clutch lever with the foot.

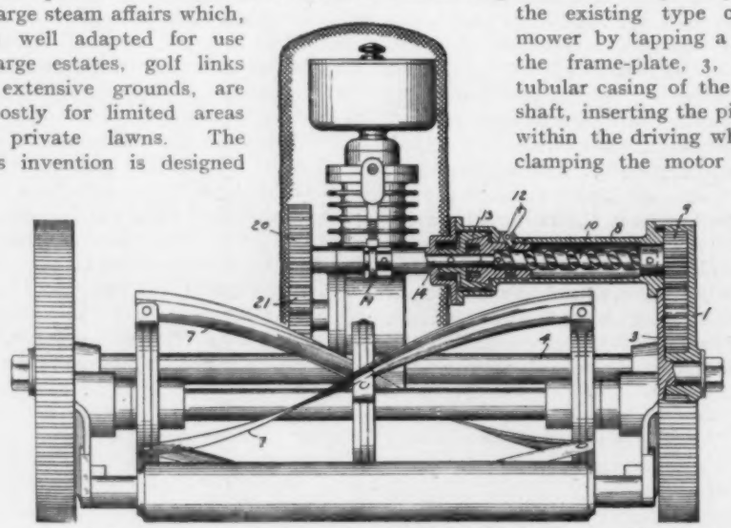


FIG. 1.—REAR VIEW OF AIR-COOLED MOTOR LAWN MOWER.

Correspondence

Time Factor in Patent Possession.

Editor THE AUTOMOBILE:

People who are fond of speculating about things in the far-off future not infrequently anticipate the ultimate disappearance from the automobile industry of the Selden patent—both the legal instrument itself and its now commanding influence in the trade. It is possible that they may lose sight, however, of one important feature of a situation such as this—which is by no means a new one in American business life. A reference to a well-known case will most aptly illustrate the point in mind.

It is an interesting fact that the grip of the American Bell Telephone Company upon the telephone business has grown stronger, as well as very much more profitable, since the basic patents held by that corporation have expired. The reason for this result is not far to seek, though it is a point not often considered. The enormous expense undergone in the defense of patent rights—to say nothing of the initial expense of acquiring the patents themselves—might lead to the conclusion that the gain or loss of a certain contested right was a matter of life and death, in a commercial sense, to the holder of it.

The "life" of a United States patent, only seventeen years, is yet sufficiently long to give an energetic and enterprising company plenty of time in which to develop, and in a large measure to secure, its advantages. During this time its monopoly is more or less, if not absolutely, complete; and competitors, whether claimed infringers or not, are kept in a condition of uncertainty. The business which the patent holders come gradually to control, the surplus funds they very likely accumulate, and the experiences they gain, bring them benefits which are invaluable in the midst of the vigorous competition which sooner or later springs up.

It is a case of time turned into capital, and, generally speaking, the commanding advantage is with the man or concern which first and most boldly occupies the field over which the patent is supposed to preside. Permanent establishment in that field is often as much a matter of time as of means—sometimes even more. This much is not written as a special plea for the Selden patent, or in behalf of its business representatives, the Licensed Association. It is meant simply to be a suggestion to the non-licensed makers and others interested, not to underestimate the advantages which the time taken up in trying to sustain the Selden patent gives to the holders of that instrument. This advantage is probably worth all it has cost to acquire it and all that will be spent in the effort to uphold it in the courts, without regard to the ultimate result of the litigation over it.

New York. B.

This view of our correspondent is interesting, and calls for comment which will be found on the editorial page.—ED.

Run of 600 Miles in South Africa.

Editor THE AUTOMOBILE:

I enclose some snapshots taken on a recent trip to Kimberly and return, a distance of 300 miles each way. We used a 24-horsepower Darracq and had no trouble whatever on the trip. The people along part of the road had never seen a car before and we created much excitement in the towns through which we passed.

The roads were level and hard with the exception of six miles of sand outside of Kimberly, and we made a run of 150 miles in a day easily.

The passengers are Postmaster General Brown, on the front seat, Mr. Stein, owner of the car, in the tonneau.

H. F. LEWIS.

Johannesburg, South Africa, formerly of Syracuse, N. Y.

Across Country at Bloenbot. Crossing Vaal River, Dry for First Time in Years. Stop at a Boer Farmhouse.

SNAP SHOTS TAKEN ON A TRIP FROM JOHANNESBURG TO KIMBERLY AND BACK, IN SOUTH AFRICA.

Correct Weights for Flywheels.

Editor THE AUTOMOBILE:

Will you be kind enough to inform me the correct weight of flywheel for a gasoline engine of 5 inches bore by 6 inches stroke; also for 5 1-8 by 6 inches?

E. M. DAWSON.

Denver, Colo.

The weight of a flywheel is determined not only by the cylinder sizes but by the engine's speed; and is moreover largely a matter of compromise between the need for stored energy and the disadvantages of a heavy engine. Consequently there is no fixed rule for flywheel sizes. The engines specified, if the flywheel diameter is three times the stroke (a common proportion for automobile and launch engines), should have not less than 150 pounds in the rim, which would be given, approximately, by a section of 12 square inches, or, say, 6 inches wide and 2 inches thick, If the normal engine speed is below 800 with throttle open, the rim might be a little heavier.—ED

Horsepower and Speed of Launches.

Editor THE AUTOMOBILE:

We have noted with considerable interest the descriptions, which have appeared recently in your columns, of different high-speed launches, and wish to speak a word for builders in regard to speeds claimed for these different boats.

In one instance an account appeared of a 30-foot boat equipped with engine of 20-odd horsepower, for which a speed of better than twenty-five miles an hour was claimed. No mention was made of the course over which this boat was tried or who were time keepers. The speed claimed for her would probably be impossible of realization under severe trial conditions, unless the horsepower given was actually much greater. When reputable builders require from 35 to 55 horsepower to obtain a speed in the neighborhood of twenty miles an hour with a 30-foot boat, is it not misleading to the average purchaser to have claims of much greater speed on smaller power put before him? It does not give the conscientious builder equal chance with others who are willing to promise great things in the way of speed.

Anyone who is acquainted with the principles of naval architecture knows that it is practically impossible to obtain some of the speeds claimed on the powers mentioned, but people who are going into the launch business from the automobile business seem to think that they can obtain nearly as much speed on the water with a given power as on land. Take, for instance the *Durendal*, a 30-footer, which

ran second in the Harmsworth Cup Race. Her record under competition conditions was about nineteen knots, and she was equipped with an eight-cylinder motor of between 40 and 50 horsepower. Or, for instance: The Thornycroft launch entered in the same competition, with 20 horsepower, made a speed of about seventeen knots. Messrs. Simpson, Strickland & Co., with their 30-foot steam launch, required 140 indicated horsepower to obtain a speed of about twenty-three miles. Is it not, therefore, better that the public should be warned against these so-called extremely fast automobile launches, where the power given could never produce these phenomenal speeds?

Trusting that you will take this matter in hand in behalf of launch builders, I remain,

ONE OF THEM.

There has been unquestionably a good deal of exaggeration in published statements regarding the speed of auto boats—particularly in the daily press. How far this has been intentional and how far the result of ignorance concerning the conditions governing speed, who can say? Speeds claimed and speeds attained are not necessarily identical. No builder of repute can find a more speedy way of destroying his usefulness than by making false claims, but our correspondent should remember that many persons who have been recently drawn into the auto boat business are profoundly ignorant of the laws governing the resistance and propulsion of vessels. Further they, probably, would not know the differences between a keelson and a panting plate, or between stream lines and negative apparent slip.

We do not see how the purchaser can be financially affected by such misstatements. A buyer of a high speed launch who would not safeguard himself by an enforceable speed guarantee, given by the builder, would not deserve much sympathy in case of loss. The builder who would decline to give such a guarantee would declare his incompetence or irresponsibility by the act.

Speed trials to be "above suspicion" should be conducted on a course, usually a mile, laid off by some competent person, such as a county surveyor, a naval or army engineer officer. The observers should also understand their business, and if "official," so much the better. The true mean speed can then be ascertained by making four or preferably six runs alternately in opposite directions. When the separate runs are tabled in order the means of consecutive speeds are figured continually until only one remains, or for ordinary purposes sufficient exactness can be reached by taking the ordinary mean of second means. If it is desired to find the speeds of the current on the course during the trial the differences between the real (true mean) speed of the boat and her observed speeds on the several runs will give this resu[illegible].—ED.

Automobile Coaches for Rail Lines.

Editor THE AUTOMOBILE:

I wish to learn the names of manufacturers of automobile street cars or vehicles adapted to run on rails and driven by means of an explosion engine. I would like to correspond with a practical railroad engineer relative to building a short rail line for such cars.

Salamanca, N. Y. "STREET CAR."

The Chicago Motor Vehicle Co. last year brought out a twenty-four passenger coach driven by an explosion motor and fitted with flanged iron wheels to run on rails. If there are others we do not recall them. Any information on this subject will be appreciated and forwarded to the inquirer.—ED.

Economical Expansion—Charge Induction.

Editor THE AUTOMOBILE:

Will you kindly inform me whether there is any economy in a gas engine that expands its explosive charge beyond the point of compression? What is the best way of inducing a new charge of gas into the cylinder of a two-cycle engine?

E. S. STRICKLAND

South Bound Brook, N. J.

A gas engine gives its highest economy, under given conditions of compression and fuel when its charge is expanded to atmospheric pressure. With ordinary compressions this pressure is reached when the volume of the expanded gases is about double that of the fresh charge at atmospheric pressure, or a little greater. Consequently, fuel can be saved by restricting the volume of the fresh charge, and proportioning the compression space to correspond.

The charge in a two-cycle engine may be "transferred" either to the top of the cylinder, admitting it through a large cam-opened poppet valve, or to the bottom of cylinder, opposite the exhaust port, as is more commonly done. In the latter case a deflector on the piston head directs the fresh charge upward so that it will mingle as little as possible with the burnt gases. So much depends on the particular design that it would be hard to say which method is preferable.—ED.

More on Catalogue Deficiencies.

Editor THE AUTOMOBILE:

The letters from Mr. Few and "Ventilator" in your issues of January 2 and February 6 call attention to a condition which, if it characterized the printed matter of the leading automobile companies, would scarcely be a credit to the industry, now that the latter is supposed to be out of its swaddling clothes. It would seem self-evident that the man who gets a catalogue does so because he is looking for information which is not otherwise or conveniently accessible, and yet some makers appear to aim at saying as much and telling as little as possible in their business literature. We have always believed that a policy of this sort would excuse an intending purchaser for concluding that the maker had some other reason than the possession of a trade secret for his policy.

The suggestion of "Ventilator," that specifications be tabulated for convenience, is evidently a good one and could well be followed in all catalogues. Certainly the items he names ought to be fully covered.

RAY D. LILLIBRIDGE,
For White Sewing Machine Co.

New York.

Gasoline for Steam Car.

Editor THE AUTOMOBILE:

I am using a steam car and am having considerable trouble with my burner. If not asking too much, could you advise me as regards the quality of gasoline that should be used and how I might be able to know when I had such quality?

Galveston, Texas. F. S. THOMPSON.

Stove gasoline, testing 74 or 76 degrees Baumé is right. It is best tested with a densimeter, which may be bought of any dealer in automobile supplies; but a rough test may be made by pouring a little into the palm of the hand. If it evaporates completely and readily, it is safe to use. If it leaves an oily residue, don't use it. Quite possibly the trouble is in the burner or vaporizer, either of which may be clogged and need cleaning out.

PROGRESS OF HIGHWAY IMPROVEMENT UNDER STATE AID.

The States that have made the greatest progress in road building are Massachusetts, Connecticut, New York and New Jersey, and in these States the interest in road improvement is greater than anywhere else in the country. The building of one good road creates a demand for more of the same kind. All these States are working on what is known as the State-aid plan, the State co-operating with counties and townships in building the roads and bearing a large share of the expense.

In a recent report State Commissioner MacDonald of Connecticut says that that State is "almost unanimous for road improvement." Since 1895, when State-aid was adopted, 162 Connecticut towns out of a possible 168 have had improvements made under that plan. The appropriations made by the State have steadily increased, successive legislatures having appropriated $150,000, $200,000, $350,000 and $450,000. More than 500 miles of roads have been constructed. He says:

"Our work in Connecticut," says Commissioner MacDonald, "is so similar in character to that embodied in the various bills for national aid that I must express my gratification that the matter has been taken up by the United States Government. I believe it is the right and duty of the Government. I have always taken the position that the public highway is a public possession, and that the public in general should pay for its improvement."

Convertible Limousine Car.

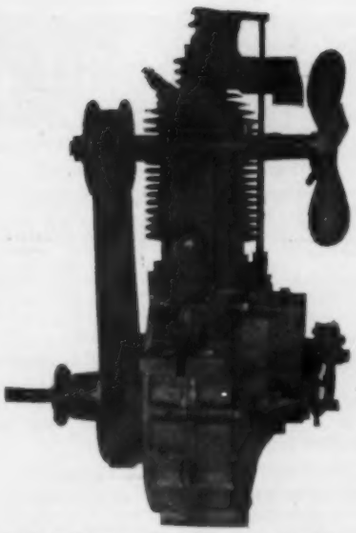
A combination vehicle which may be used in any one of three forms is made by the F. B. Stearns Co., Cleveland, O. The usual tonneau body is so designed that it can be fitted with a closed top made of wood and glass with curtains to protect the driver at the sides of the car. The tonneau is entered from the rear and is roomy enough to seat three large persons. The plate glass windows are removable, so that the car can be used with the canopy top for touring in fine weather, or, if desired, the top may be entirely removed by taking out six bolts. The chassis of the car is the new 24-horsepower equipment of the company, providing ample power for handling the car with limousine body and full load over average roads and stiff grades. The standard finish is jet black with green mouldings, red striping and bright red running gear.

MICHIGAN LIGHT AIR-COOLED 3½-HP. RUNABOUT.

The Michigan Runabout.

A light car, designed to occupy the place between the voiturette and the unsociable motor bicycle and to sell at a low price is the Michigan, manufactured by the Michigan Automobile Co., Limited, of Kalamazoo, Mich. This runabout made its appearance last year and after being thoroughly tested out the model of 1904 is offered with few material changes. The parts have been strengthened and refined where necessary, and improvements have been incorporated in the makeup of the machine. The frame is built of stiff steel angle stock with three-point suspension—at the rear axle ends and at the center of the front axle—giving a reasonable amount of flexibility to the running gear. Roller bearings are used in the rear axle and ball bearings at the front.

The motor is a single-cylinder upright engine with 3 1-4-inch bore and 3 1-2 inch stroke, giving 3 1-2 horsepower at 2,000 r.p.m. It is carried on the frame and rear axle casing. Cooling is accomplished by fins, cast on the cylinder and valve chambers, assisted by an aluminum fan which is belt driven from the engine shaft. The transmission gives two speeds forward, the usual reverse not being considered necessary on so small a car. The power is carried forward from the engine to a countershaft on which are mounted two chains to carry the drive back to the live rear axle. Engagement of the speed clutch is obtained by the movement of a side lever. The speed change lever is provided with a rotating hand grip which is coupled up with the commutator to advance or retard the ignition, thus obtaining all ranges of speed through the medium of the one lever. Steering is by center tiller. Brake is controlled by conveniently located pedal. A luggage compartment is provided at the front of the vehicle, the hood being designed for this purpose, as the gasoline tank is located under the seat. The weight of the runabout is 575 pounds with all on and the seating accommodation is ample for two large adults.



MICHIGAN AIR-COOLED MOTOR.

Three hundred and fifty delegates from fifty-three counties in New York have asked for $2,000,000 to be spent during the coming year on the main highways of the State. Thirty-seven counties are now waiting for the annual State appropriation, and have appropriated on their own part $3,558,000 as against nothing from the State. Governor Odell has stated that the State's revenues will permit him to appropriate but $1,000,000 this year unless a direct tax is placed on the State.

STEARNS TONNEAU WITH DETACHABLE ENCLOSED TOP.

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GORDON BENNETT PRELIMINARIES.

A very serious responsibility rests upon the technical committee of the Automobile Club of America which has charge of the eliminating trials for the Gordon Bennett racing cars. In its control lies not only the selection or rejection of the cars actually entered, but the reputation of the entire American automobile industry. There must be no repetition of the 1903 conditions. A certain want of appreciation of the requirements, however excusable on that occasion, would be an admission of stupidity and incompetence now. The widespread publicity given to the race last year has made every one who ought to know, quite familiar with the conditions to be met, and there can be no evasion of responsibility on the part of any one in any way participating in the effort to bring the cup across the Atlantic this year.

No authoritative announcement has yet been made by the committee as to the time and place of the eliminating trials. From various sources suggestions have come that these trials be held on one of the Atlantic Coast beaches, either in Florida or Virginia. It is to be hoped that a beach trial will not be decided upon unless the committee finds it absolutely impossible to secure a suitable road course for the trials. Qualifying trials would really be a more suitable designation than eliminating trials, for the purpose of the committee is manifestly not so much to bar out any or all machines as to select the cars that by their performance create a reasonable belief that we may capture the cup. Trials on a beach would determine little else than the maximum speed of a car under the most favorable conditions, and could give little information concerning the essential quality of reliability.

Our great weakness in entering an international contest of this sort is inexperience in racing on public roads, and for this reason also beach races are quite inconclusive in the preliminary trials. The skill of the driver is quite as much a factor in the winning or losing of the race as the correct construction of the car, and to determine this a road trial would be vastly more effective than any series of dashes on a level beach.

As we have already said, the responsibility resting on the committee is very serious, and while it is our earnest desire that the trials shall qualify a full representation for America in the cup race, we are convinced that to permit doubtful entries would be suicidal. The vested interests of those of our manufacturers who are building up a foreign trade unquestionably demand recognition.

SELDEN PATENT ADVANTAGES.

An interesting letter on the subject of the Selden patent, from a correspondent, is published elsewhere in this issue. His argument, which we will assume the reader has followed, is ingenious and we can vouch for the fact that he has not the slightest financial interest in the question and may be assumed therefore to be free from bias. With his conclusions, however, we cannot at all agree; in fact, to our thinking they are really the antipodes of what the conclusions must be.

It will be conceded by almost everyone interested that the automobile manufacturers of today are missionaries who believe that future means of locomotion will include the use of the automobile in the greatest variety of localities and conditions. The next step is to persuade the purchasing public to share this belief. If this is not so, then the industry has no substantial foundation and all the forms of publicity adopted by the trade, including the support of publications such as this, are part of a gigantic confidence scheme. The number of converts bears some exact proportion to the number of missionaries; the greater the number of earnest laborers in the field, the greater the results that will follow the propaganda.

Now, the object of the licensees under the Selden patent is to limit the number of active workers in the field, and this necessarily imposes a greatly increased burden on the chosen few. To uphold the patent they must continue to work under this pressure, to limit the number of workers and so impede the spread of automobilism. When the patent shall have expired, or have been declared void, there will be a host of new workers ready to enter the field and reap the benefit of all the missionary work that has been done, and meanwhile this host has not to contribute a single cent to the cause.

To our thinking, the view that the Selden licensees could control the situation after the lapse of the patent is too parochial to fit the case. As Col. Albert A. Pope stated recently, there are only about 100 builders of automobiles in the country, while the number of carriage builders runs into the thousands. This is a vast and enormously wealthy country, ever adding to its numbers in population and to its purchasing powers, and to suppose that the Selden licensees could keep control in perpetuity, even of the home market, is incredible.

The Bell Telephone Company's practical monopoly is really not a parallel case. This is sustained solely by reason of the vast number of subscribers on its books. Anyone putting in a telephone naturally wishes to be connected with the largest possible number of other users and so, in the large commercial centers at least, invariably selects the Bell system. No such condition exists in the automobile field.

A much closer comparison can be made with the gas engine itself. The Otto patents, for the four cycle system, for a time created a monopoly. When these lapsed the original licensees ceased to control the situation and now produce only a small percentage of the countless thousands of gas engines manufactured in all parts of the world.

Again, take the case of the absolutely impregnable Tesla patents covering the construction of alternating current electrical apparatus and now held by the Westinghouse Company. It has cost this company vast sums of money to demonstrate to the purchasing public the practicability and serviceabilty of apparatus constructed under these splendid patents. Yet it is an open secret that most of the large builders of direct current electrical apparatus have all their plans made for putting on the market complete lines of alternating current machinery the instant the Tesla patents shall expire.

Our attention recently was called to a directly opposite policy pursued with advantage by one of the largest manufacturers of collars in the country. This concern we are informed originated and secured letters patent on the now popular double standing collar, but intentionally has never restrained any other manufacturer from making and selling this type of collar. The patentees reasoned that the sale of such collars by other makers would create a public demand for the style. This was the result and the original makers still sell all they can manufacture, at double the price charged by most of their competitors.

A monopoly is a contradiction in terms when it does not imply control of all natural sources of supply or all possible avenues of purchase. There is nothing in our correspondent's argument to convince the reader that inclusion in the Selden patent combination is worth while.

TRADE OPENINGS IN THE WEST.

In seeking for an outlet for the product of their factories many of our manufacturers seem to overlook the trade possibilities of the Far West. In the vast territory lying between the Mississippi River and the Pacific Coast Range there are thousands of possible purchasers of automobiles who only need an ordinary amount of missionary work to become owners. In the northwest especially, where the population is comparatively great, there is a large and rapidly-growing market. Profitable seasons have greatly increased local wealth and with a realization of the possibilities of the automobile as a serviceable vehicle for road transportation comes the desire for possession. In no other agricultural section is there to be found a more enlightened or progressive population, and the prejudices that are deeply rooted in older communities are not a flourishing crop in the northwest.

Already there is a keen interest in the new form of locomotion which has been awakened largely by the successful transcontinental trips of the past year.

Prior to the completion of those trips persons who labored in the field in the cause of automobilism were usually met with the statement: "The automobile is good enough for travel on the good roads back East, but wait until they get out here and tackle our conditions." This has been answered in the most effective way possible by demonstrations, and in place of scepticism there is now a live interest.

This is reflected in a good deal of correspondence that reaches this office from sources far removed from recognized automobile centers. At the Chicago show there were many evidences of this interest in the number of visitors from the Far West who took keen interest in the exhibits, often resulting in purchases, and in the number of new agencies sought by dealers.

The demand seems to be chiefly for cars of moderate price, with a good margin of power and not too heavy, and that will be able to maintain a fair road speed under frequent adverse conditions. The more luxurious machines and those of high power and speed are not so much in demand.

Buffalo automobilists are showing considerable interest in the Brownlow bill, which provides for an appropriation of $24,000,000 by the federal government for national aid in building roads. Dai H. Lewis has written a personal letter to every owner of a machine in Buffalo asking him to write his congressman and senator urging them to vote for the bill and also requesting the automobilist to get as many people as he can in his neighborhood to do the same thing. Mr. Lewis has informed A. R. Shattuck what he has done in Buffalo and suggests that Mr. Shattuck try to interest some one in every town in the country to take similar action.

MOTOR BOAT OWNERS AROUSED AGAINST GROSVENOR BILL.

Protesting to Their Congressmen that Its Passage Will Work Harm to a Growing Industry and Do No Good.

REQUIRES ENGINEERS' AND PILOTS' LICENSES.

Opposition to the passage of the Grosvenor bill now before Congress, which has for its object the extension of the United States license and inspection laws to all motor boats is rapidly developing among the builders of power boats. Under the existing laws the owner of the small pleasure boat is not required to take out an engineer's license or to carry a licensed engineer on board, as is necessary in the case of steam vessels and large power boats used for commercial purposes. This question came up last season but did not attract such widespread attention as now, when the interest in the use of fast motor boats has developed tremendously.

O. R. F. Kelsey, a member of the trade in Boston, reports that one of the Racine, Wis., builders has issued circulars to thousands of power boat users throughout the country asking them to write their representatives in Congress on the subject.

The text of the proposed bill is as follows:

To amend an act entitled "An Act providing for certain requirements for vessels propelled by gas, fluid, naphtha, or electric motors," approved January eighteenth, eighteen hundred and ninety-seven.

Be in enacted by the Senate and House of Representatives of the United States of America in Congress assembled, that the act of Congress approved January eighteenth, eighteen hundred and ninety-seven (chapter sixty-one, page four hundred and eighty-nine, volume twenty-nine, United States Statutes at Large), amending section forty-four hundred and twenty-six of the Revised Statutes of the United States, relating to vessels propelled by gas, fluid, naphtha, or electric motors, be, and is hereby amended, so as to read as follows: All vessels or boats carrying freight or passengers for hire, propelled by gas, gasoline, fluid, naphtha, electric motors, alcovapor, or other like motors, shall be and are hereby subject to all the provisions of section forty-four hundred and twenty-six of the Revised Statutes of the United States relating to the inspection of hulls and boilers and requiring engineers and pilots, provided that the same person may be licensed as both engineer and pilot; and all vessels or boats so propelled without regard to tonnage or use, shall be subject to the provisions of section forty-four hundred and twelve of the Revised Statutes of the United States, relating to the regulation of steam vessels in passing each other, and so much of section forty-two hundred and thirty-three of the Revised Statutes relating to lights, fog signals, steering and sailing rules as the board of supervising inspectors shall by their regulations deem applicable and necessary for their safe navigation.

Provided further, that applicants for license to operate and run a boat that comes within the provisions of this section may be examined as to color-blindness, deafness and general qualifications as to skill and experience by the local inspector at the time and place where the boat is inspected.

Special Correspondence.

NEW LONDON, Conn., Feb. 20.—The owners of speed launches and motor boats have combined against the obnoxious bill introduced in Congress by Representative Grosvenor of Ohio, which would compel the operators of small boats to be licensed engineers and pilots, subject to the same regulations as govern the navigation of steam craft. Along Long Island Sound and the entire southern coast of New England there are thousands of these little boats which would go out of service if such a measure became a law; and there are many makers of these boats who would be forced to suspend business or at least find their operations seriously curtailed. The motor boat owners, and especially the fishermen who use the little explosion engines for auxiliary power, are much agitated over the attempt to force the passage of the bill and endeavors are making to bring about concerted action through representatives of the Atlantic coast States in Congress to defeat the measure.

The Grosvenor bill, the fishermen say, was drafted by some Westerner who does not understand the situation and the hardships the enforcement of the law would entail, and they assert that it would be useless legislation. Copies of the bill are being circulated widely and appeal is being made to all motor boat owners to write personal letters of protest to their congressmen.

It is argued that the passage of this bill would in effect bridle the industry, as the great majority of owners of power boats cannot afford to employ men to run them, the owners deriving their pleasure from running the boats themselves.

So few have been the serious accidents connected with the running of gasoline boats that there are no statistics at hand to afford a comparison. The gasoline launch, it is pointed out, is the outgrowth of the ceaseless activity of the recreation loving amateur. The high speed launch is a direct result of the intelligent inquiry of the aquatic sportsman. By his money and his brains he has vastly extended the domain of human pleasure, for the motor boat is now quite within the compass of the resources of the ordinary citizen. It has taken twenty years to bring the little craft to a state of comparative perfection; and for every step of its way it has been followed by jealous eyes which have sought to derive a revenue from the practical navigation of them.

It is a safe statement to say that not one motor boat owner in a thousand in New England is in favor of the proposed law.

STATUS OF AUTOMOBILE BILLS IN NEW YORK LEGISLATURE.

Special Correspondence.

ALBANY, Feb. 20.—While the first hearing on the new bill for the regulation of automobiles was had by the Senate Committee on Roads and Bridges last Wednesday, the Assembly Committee on Internal Affairs was the first to report the Assembly copy of the bill introduced by Assemblyman Cocks, of Nassau, now known as Assembly Bill No. 563. The bill was reported to the House, Friday morning with certain amendments which were not asked

for by the automobilists, but which the committee inserted of its own volition. Some members of the committee called attention to the fact that automobilists were accustomed, where they found a dam suitable to their purposes, of using it as bridge or highway, and as the mill-dam did not come under the head of "causeway" it was suggested to strike out "causeway" and insert "bridge." Hence the bill as reported on page 6 reads: "at a greater rate of speed than one mile in six minutes, or on a bridge or dam (causeway struck out) at a greater rate of speed than one mile in fifteen minutes." This provision applies to highways where the territory contiguous thereto is closely built up.

Again in subdivision 2, regulating motor vehicles when approaching crossings of highways, bridges, or sharp curves, "dam" is inserted again and the speed is limited to one mile in fifteen minutes in place of one mile in twelve minutes which was the original limit in the bill.

In the old subdivision 5 of the bill, now subdivision 6, a minimum fine of $25 is fixed preceding the maximum of $50.

At the hearing last Wednesday the only person who appeared in opposition to the N. Y. S. A. A. bill introduced by Senator Hill and Assemblyman Cocks was J. L. Brower, of the West End Association, who said that the law as it now stands on the statute books relative to initial conviction should be retained. President Winthrop E. Scarritt of the Automobile Club of America, made the principal speech in support of the bill. Charles T. Terry represented the National Association of Automobile Manufacturers, while the New York State Automobile Association was represented by G. H. Stilwell of Syracuse, W. H. Baker of Buffalo and Oliver A. Quayle of Albany, all on the legislative committee of the association. W. W. Niles of New York, counsel of the Automobile Club of America, also appeared for the bill.

'FRISCO MOTORISTS STILL LABORING FOR GOLDEN GATE PARK RIGHTS.

Special Correspondence.

SAN FRANCISCO, Feb. 9.—President F. A. Hyde and Directors John D. Spreckels, L. P. Lowe, S. G. Buckbee and C. C. Moore, of the Automobile Club of California, were present as a delegation at the regular February meeting of the Park Commissioners of San Francisco to discuss the ordinance proposed by Reuben H. Lloyd for the regulation of automobiles in Golden Gate Park.

They maintained that most automobilists are not "scorchers," and that consideration should be given to the law-abiding.

President Hyde said that there are now in San Francisco five hundred automobiles and that ten times that number of people use them. He and the other directors asserted that an automobile covering a mile in three minutes is safer than a horse-drawn vehicle going at the rate of a mile in seven and a half minutes, and offered to show the members of the Commission how quickly and certainly a machine can be controlled.

When Commissioner Sullivan said that his own horses had shied at an automobile in the park, J. D. Spreckels suggested that he ought to get an automobile which would not shy.

The automobilists said that it is never proposed to exclude horse-drawn vehicles from the park, though racing with them often seriously endangers women and children.

After the delegation had retired, the commissioners discussed the proposed ordinance. President A. B. Spreckels was not in favor of granting the use of the Overlook Drive to the automobilists, on which the proposed ordinance permits a speed of ten miles an hour on the straight, and of eight miles an hour on the curves. On the Great Highway the speed is limited to six miles an hour. The commissioners seemed willing to extend the use of the Great Highway so that automobiles may reach the Cliff House.

It was decided that Commissioner R. H. Lloyd should furnish each member of the commission with a copy of the proposed ordinance and that such amendments as seem desirable should be incorporated in it. The matter will be taken up again at the March meeting and an endeavor will be made to frame an ordinance acceptable to all.

AMENDED BASSETT BILL SATISFIES OHIO MOTORISTS.

Special Correspondence.

CLEVELAND, Feb. 20.—The obnoxious Bassett automobile bill, introduced in the Ohio Legislature by Representative Bassett, has been approved by the Highway Committee to which it was referred, after important amendments had been forced by Representative Chisholm of Cleveland, and as all opposition has been withdrawn, there is little doubt that it will soon be passed by both houses and become the law in Ohio.

The bill now provides that local authorities in cities and villages cannot compel automobile drivers to run at a lower rate of speed than eight miles an hour in the business sections and fifteen miles an hour in the suburbs. On the country roads automobilists will be permitted to drive twenty miles an hour and county commissioners and township trustees can not require a lower rate. The original bill provided for only fifteen miles on country roads and correspondingly lower rates in cities and villages. The bill will undoubtedly meet with general favor among automobilists.

The bill further provides that upon signal from the driver of a passing horse, the chauffeur must stop his automobile. If the horse is restive, the operator, upon a second signal from the driver of the horse, must stop his engine. The original bill provided that the engine must be stopped upon the first signal. Automobile enthusiasts headed by Mr. Chisholm, made such a strong objection against this point at the recent hearing on the bill in Columbus, that the matter was compromised after a hard fight.

The penalty for violation of the law will be a fine of from $5 to $50. The original bill contained an imprisonment penalty, but this was stricken out and violators of the law will not be placed in duress except for failure to pay the fine.

JONES BILL BURIED IN AMENDMENTS.

Another automobile bill has been introduced by Representative Jones of Delaware. In brief, the bill practically makes it a misdemeanor to operate an automobile outside of a city or town. At first it was regarded as a joke, but Jones insists that it must be taken at its face value. The bill had its first reading and the champions of the automobile cause were so astonished that they sat speechless. On second reading, however, it was so loaded down with amendments that there was hardly a piece of the original draft left. Among other things the amendments make the bill apply to threshing machines, corn huskers, and traction engines and provide that they can not be operated outside the city limits, and that all horses traveling the highways must have their eyes blindfolded and their ears stuffed with pink cotton.

CLEVELAND ORDINANCE AMENDED.

The municipal legislators are also preparing for the spring campaign with a new crop of automobile measures. As a result of an accident last fall, the Cleveland ordinance was declared to be defective in that it did not protect against careless driving. This defect was rectified by the council at its last meeting, when the local ordinance was amended by a provision to the effect that "all automobiles shall be operated in a careful manner so as not to endanger or unnecessarily inconvenience any person." This will permit the arrest of reckless chauffeurs under the general charge of careless driving.

Congressional Bill Relating to Ferryboats.

Special Correspondence.

WASHINGTON, D. C., Feb. 20.—Representative Loudenslager, of New Jersey, has introduced a bill in the House of Representatives to amend an act entitled "An Act to Amend Section 4472 of the Revised Statutes So as To Permit the Transportation by Steam Vessels of Gasoline and Other Products of Petroleum When Carried by Motor Vehicles When Used as Source of Motive Power."

The text of the bill follows: "That the provision in said act which directs that all fire, if any, in such vehicles or automobiles be extinguished before entering the said vessel and that the same be not relighted until after said vehicle shall have left the same, be, and the same is hereby, amended

AMERICAN AND FOREIGN AUTOMOBILE AND MOTOR BOAT FIXTURES.

February 8–29.—National Motor Boat Exposition. Herald Square Exhibition Hall, New York. Dr. Robert Taylor, director.
February 19–March 5.—Tenth Annual Sportsmen's Show. Madison Square Garden. Auto Boats and Motors.
February 20–March 6.—Motoring and Sports Exhibition. Turin, Italy.
February 23–27.—Side-Slip Trials. Versailles, France.
February 29–March 5.—Cleveland Automobile Show. The Grays Armory. Cleveland Automobile Club.
March 3–5.—French Fuel Consumption Trials. *L'Auto.*
March 6–12.—Second Annual Buffalo Automobile Show. Convention Hall. Automobile Trade Association and Automobile Club of Buffalo.
March 8–12.—First Springfield (Mass.) Automobile Show. City Hall. Automobile Club of Springfield.
March 10.—Opening of Motor Boat Races and Exhibition at Monaco.
March 13–20.—Automobile Week at Cannes, France.
March 14–19.—Third Annual Boston Automobile Show. Symphony Hall. Boston Automobile Dealers' Association.
March 17.—Start of Touring Trials, Paris to Rome. *La France Automobile.*
March 19–26.—Cordingly & Co's Motor Car Exhibition. Agricultural Hall, London.
March 20–26.—Automobile Festival at Nice, France.
March 21–26.—Fourth Annual Washington Automobile Show. Light Infantry Armory. Washington Automobile Dealers' Association.
March 22–27.—Trials of Electric Vehicles at Paris. *Monde Sportif.*
April 4–9.—Commercial Vehicle Trials. New York City. Automobile Club of America.
April 1–15.—Motor Boat Exhibitions and Races. Monaco. International Sporting Club and *L'Auto.*
April 16–May 31.—Automobile Show. Vienna, Austria.
May 19–20.—Non-Stop Run, Glasgow to London. Automobile Club of Great Britain and Ireland.
May 23–31.—Automobile Week at Aix-les-Bains, France.
May 30.—Speed Launch Races. Manhasset Bay, off Port Washington, L. I. American Power-Boat Association.
June 10.—Mont-Cenis Hill Climbing Contest. Automobile Club of Italy.
June 16–20.—International Cup Race Week. Homburg, Germany.
June 24–25.—Challenge Cup Races for Speed Launches. Hudson River, at 86th Street, New York. American Power Boat Association.
July 16–17.—Motor Boat Races. Ostend, Belgium.
July 17.—Motor Boat Run. Antwerp to Ostend, Belgium.
July 18–23.—Automobile Week at Ostend, Belgium.
July 23–25.—Motor Boat Races. Lucerne Switzerland.
July 30.—British International Cup Race for Motor Boats. The Solent, England. A. C. of G. B. & I.
August 5–11.—Paris-Deauville Motor Boat Race.
August 12.—Gaston-Menier Cup Race for Motor Boats. France.
August 13–14.—Calais-Dover-Calais Motor Boat Race. English Channel.
August 15.—Calais-Boulogne-Calais Motor Boat Race. English Channel.
August 28.—Ventoux Hill Climbing Contest at Avignon, France.
October 3.—Dourdan Kilometer Trials. *Monde Sportif.*
October 9.—Gallion Hill Climbing Contests. France. *L'Auto.*
October 14–22.—Leipzig Cycle and Motor Show. Germany.
November 20.—French 100-Kilometer Trials. Automobile Club of Algeria.

so as to read as follows: 'That all fire, if any, in such vehicles or automobiles be extinguished immediately upon boarding said vessel and that the same be not relighted until each and every vehicle, animal, and passenger shall have left the vessel. Provided, that such vehicles or automobiles and their occupants shall be the last to board the vessel.'"

The bill was referred to the Committee on Interstate and Foreign Commerce.

Anti-Front-Seat Bill Weakly Supported.

Special Correspondence.

SPRINGFIELD, Mass., Feb. 20.—Local automobile manufacturers are not inclined to be nervous over the introduction in the Legislature of the Collins' bill, which prohibits the use of cars having a seat in front of that from which the car is operated. It is admitted by both the Knox Automobile company and the J. Stevens Arms and Tool company that the effect of the passage of such a bill would seriously affect their business, necessitating radical changes of body design, as the runabout machines of both concerns have folding front seats.

A similar bill was introduced into the Legislature last year and met with overwhelming defeat. The Knox company has notified the Springfield representative in the Legislature of the firm's adverse interest in the bill and has received assurance from him of the extreme unlikelihood of its passing.

Ferriage Charges in Connecticut.

Special Correspondence.

NEW LONDON, Feb. 20.—The law passed at the recent session of the Connecticut Legislature regarding rates of ferriage for power vehicles is now in force in this State. The new law allows ferry companies to charge 50 per cent. more for motor vehicles than for horse-drawn vehicles of the same carrying capacity. Each power vehicle with not more than one seat and the chauffeur will be carried on the ferry across the Thames River at New London for 18 cents one way, and 30 cents round trip. Ferriage for power vehicles with more than one passenger seat will be 33 cents one way and 60 cents for the round trip.

Buffalo Autos Threatened With Taxation.

Special Correspondence.

ALBANY, Feb. 22.—Senator Davis' bill amending the charter of the city of Buffalo so as to impose a tax on automobiles and other vehicles has passed both Houses of the Legislature and is now in the hands of the Mayor of Buffalo, who recommended the legislation and who will undoubtedly approve it and return it for the Governor's signature.

The amendment provides for the levying and collection of a tax upon the owner or owners of all sorts of private vehicles, including automobiles and bicycles, for the privilege of using the same on the public highways, the city to have the right to fix the amount of such tax and to prohibit the use of the public streets by the owners or drivers of any such vehicles in event of the tax not being paid, and to fix such penalty or penalties as it shall deem proper for a violation of any such ordinances as may be enacted for the purposes mentioned.

NO FIGHT OVER CONTROL OF MOTOR BOAT RACING.

Anent the statement that the American Automobile Association would attempt to wrest control of motor-boat racing from the American Power-Boat Association, A. R. Pardington, chairman of the race committee of the A. A. A., while at the Sportsmen's Show, said that no such move was contemplated. He declared, however, that automobilists were deeply interested in the new sport. His own club, the Long Island Automobile Club, had already formed an auto boat section; the Automobile Club of America has also formed one and contemplates the erection of a country house for them on the shores of Hempstead Bay. He, however, could see no reason why his association should not adopt the rules of the American Power-Boat Association and affiliate with it in coming events, especially such events as were under the auspices of the Automobile Clubs.

The first meeting of the new Board of Directors of the A. A. A. will be held next Tuesday, when President Whipple will announce his new committees, and when a definite policy will be announced regarding auto boat racing.

Chairman Pardington said he was working on a set of rules, and the deed of gift for the cup presented by W. K. Vanderbilt, Jr., and that he expected to be able to present these rules for Mr. Vanderbilt's consideration in a few days. Asked further where the race was to be held, he said he knew of no better location for it than Long Island.

CONDITIONS GOVERNING THE INTERNATIONAL MOTOR BOAT RACE.

Rules for the "British International Cup Race for Motor Boats" were received by the Automobile Club of America on Tuesday and the Motor Boat Committee, consisting of Peter Cooper Hewitt, Wm. K. Vanderbilt, Jr., and Col. John Jacob Astor, will issue copies for the guidance of those who intend entering for the competition which was formerly known as the "Harmsworth Cup Race."

Most important of the rulings promulgated by the Automobile Club of Great Britain and Ireland is the one that requires competing boats to carry two persons, the helmsman to be a member of the club challenging for the trophy. Entries will be received until June 1 and the race will take place in the Solent on July 30.

Smith & Mabley have made the only American entry thus far and if more than three are received elimination trials will be held after June 1.

Seven entries have been made by England, France has four and America one. Each country is allowed three starters in the race. Boats must be under 40 feet, over all, and must be provided with reversing mechanism capable of producing

ternway at the rate of four miles an hour. There is no restriction as to the horsepower of motors. Each boat must be made entirely of domestic materials in the country that it represents.

A deposit of $100 must accompany each entry with the Automobile Club, which will be returned when the boat starts in the elimination trials.

POWER-BOAT ASSOCIATION STATEMENT REGARDING RACING RULES.

Believing the subject is one for open discussion, the executive committee of the American Power-Boat Association extends an invitation to those interested in automobile boats to have a conference at an early date, with a view of adopting racing rules that shall be fair to all concerned. Some criticism has been made of the rules promulgated by the association on the ground that it is impossible under them for a boat of high power to win a race in which smaller boats compete Anson B. Cole, the secretary, has issued a formal statement in which he mentions the fact that the rules are the result of expert knowledge on the subject in question and that they have been approved by the Marine Motor Association of England.

As the matter is of decided interest to every motor boat owner the statement is given in full:

The racing rules of the American Power-Boat Association have come in for more or less criticism lately on the part chiefly of builders of automobile engines for launches. The chief ground of their complaint seems to be that under these rules, as they now stand, it is, so certain critics claim, practically impossible for a boat of high power to win any race in which smaller motor boats compete, simply because they erroneously assume that the higher powered and consequently speedier boat must give the slower boat an unreasonable handicap in time allowance.

The rules adopted by the association were originally very carefully drafted by Mr. H. J. Gielow, measurer of the Atlantic Yacht Club, who is a naval architect of the highest standing and a recognized expert on this subject. They are based primarily on the assumption that the combination of the best hull, both in form and construction, equipped with the best engine—not necessarily the most powerful—makes the best boat, not that the most powerful motor in any kind of a hull which covers the course in the shortest time should win.

Intention of the Rules.

In other words, the rules are intended to fix a standard by which a motor boat shall be judged and to cover as nearly as possible all the desirable qualifications which such a vessel should possess and which are best shown in a contest of speed.

The table of time allowance was calculated for ordinary sailing weather; absolutely smooth water may benefit the small boat and rough weather benefit the large boat.

It is not pretended that these rules are absolutely perfect, or that they are not susceptible of modification, but it is deemed wise by the association not to materially change them at the present time, for the reason that changes when made should be the result of actual experience in practice, and not based wholly upon theoretical considerations.

That the present system of rating and table of time allowance will yield satisfactory results was demonstrated in the races sailed last season, which was the first during which they were in force, but the actual data are too meager to afford any positive guide as to just where the rules can be improved. It is thought, however, that in the races to be held during the coming season, additional data will be obtained whereby the association will be enabled to formulate such modifications as may be found desirable, and that the changes so made will tend to make these rules more permanent in character and thereafter less susceptible to frequent amendment.

To Encourage Racing.

With a view to perfecting models and encouraging wholesome, well built hulls, the area of the immersed midship section was made a factor in arriving at a fair time allowance. This tends to put extremely light hulls, as in the case of a 34 foot boat, with three-eighths inch planking, on an equal footing with the ordinarily planked boat. This same factor enters into the measurement of sailing yachts. Unless power boats are built under a table of scantlings and some protection and encouragement is given to the ordinary hull, we should have all the prizes going to the light built speed boats, without regard to lines, which, of course, would end racing.

The factors for computing horsepower are area of piston, length of stroke, revolutions per minute and number of cylinders. In the ordinary marine engine the revolutions per minute average from 250 to 600; in the automobile engine they average from 600 to 1 800.

While the increased number of revolutions is against the automobile engine, its comparatively small bore and short stroke are an advantage to it.

Good and Bad Engines.

We base our computation of horsepower on the volume of gas passing into the cylinders per minute. In other words, on what an engine ought to do, and not on what it does. Brake tests place the good and bad engine on the same footing, and therefore do not encourage the building of good engines.

An illustration of the justness of this rule is found in the fact that the highest efficiency of a certain automobile engine when run in a certain launch is obtained when running at about one-half its maximum speed. The cause of this situation in this case is that the ports are not large enough to supply the proper amount of mixture when running at maximum speed, thereby reducing the compression and power.

Under our rules this engine would be rated at a much higher horsepower than it would actually develop, and properly so, for to rate it at its brake or actual horsepower, would be to put an inferior engine on an equal footing with a superior one.

England Approves of Rules.

That our rules have high approval in Great Britain is shown by the following extract from a letter written by Mr. Linton Hope, of the Marine Motor Association of England, to the American Power-Boat Association last September:—"I am obliged for yours of the 1st inst., and am pleased to say that we have been using your time scale throughout the season, and find that it works very well as regards boats which are at all similar in type and dimensions." The system of rating used by that association is almost exactly the same as ours.

To show how these rules work in practice the following examples may be cited:—

In a race held last summer the *Standard*, 58.10 feet waterline, with 105 horsepower motor, covered a ten and a half knot course in 40m. 52s.; the *Express*, 25 feet waterline, with 12.63 horsepower motor, took 1h. 1m. 56s. to cover the same course. On corrected time the *Standard* beat the *Express* 16s.

Again, the *Standard*, 58.10 feet waterline, 105 horsepower, raced the *Adios*, 55.2 feet waterline and 108.16 horsepower. The *Adios* covered ten and a half knot course in 34m. 17s., while the *Standard*, took 42m. 20s. The *Adios* won by 8m. 3s. elapsed time, and by 11m. 30s. corrected time.

The Question of Model.

This latter example should cause the owner of the speed launch to consider the question of model, and not rest content with the assumption that because his boat has a powerful engine she will therefore win.

With automobiles it is almost solely a question of the proportion of power to weight. With equal power the lightest machine is almost sure to win and vice versa, but with water substituted for the solid earth the conditions are entirely different, and a third element (model) becomes most important, and our association does not feel that high powers of themselves constitute the best or the most desirable type of boat, nor can it logically alter its position in this respect until it ceases to stand for all that is best in a motor boat or automobile launch. At least the same consideration should be given to the design and construction of the hull as is given to the machine with which it is driven, and this is precisely what the rules are intended to effect.

Auto Boat Notes.

Smith & Mabley, who have entered a boat in the race for the Harmsworth Cup in England, have decided that the racing craft shall be equipped with two engines of 75 horsepower each. In this contest the American boat will have to meet two boats entered by S. F. Edge, the Napier agent; Hutton & Co.'s three boats; Mr. Thornycroft and Howard de Walden, each one, all English, besides A. Clement, C. Pitre & Co., and Legru & Gardner, French entries.

Two regular racing boats and three that are styled semi-racers are being constructed by the Lozier Motor Company. The former will be fitted with a 24-30 horsepower engines and will be 33 feet in length with a proposed speed of about nineteen miles, while the semi-racers will be fitted with engines of 10, 15 and 20 horsepower respectively.

Hollander & Tangeman, agents for the F. I. A. T. auto boats and automobiles, expect to have a 200-horsepower F. I. A. T. boat in these waters this season. The boat is now practically ready for use, and will be a competitor in the big race of nearly 100 miles, to be held at Monte Carlo in March. It is 50 feet long, fitted with two six-cylinder engines, and its total weight is a little over 2,000 pounds. The F. I. A. T. motors, though comparatively new in this country, are well known abroad, where they are used exclusively in the submarine torpedo boats and warship tenders of the Italian navy.

F. A. LaRoche has given C. F. Herreshoff 2d, who designed the motor boat which was recently built for Frank Croker, an order for a thirty-two foot racing hull, which he will fit with a four-cylinder, four-cycle, 20-horsepower Darracq engine.

Believing they have a motor of great power, Hollander & Tangeman, agents for F. I. A. T. motors, announce their willingness to wager $5,000 on the efficiency of the Italian product. They desire a race with any firm, on condition that the boats shall all be alike. Such a race would be a test of motors. The idea is not well received at the show, as it makes the boat designs of secondary importance.

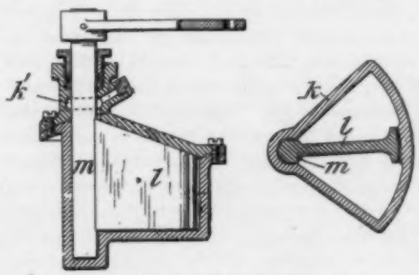
Announcement has been made that the Lozier Motor Company will market an automobile next year in addition to its regular line of motor boats, which are shown at the Sportsmen's Show.

The Panhard boat furnishes the same tune in its engines as in automobiles. When running, the four-cylinder motor throbs with that rythmic sound so soothing to the motorist.

Patents

Hydraulic Steering Check.

Nor 751,576.—Curtis H. Veeder, of Hartford, Conn. A device whereby the accidental deflection of the steering wheels of a motor car may be obviated and at the same time the steering may be easy of manipulation. The device consists of a casing, *k*, secured to the axle of the vehicle. The casing contains a stem, *m*, which supports a wing piston, *l*, the latter having a free working fit within the casing, the wall of which is concentric with the axis around which the piston oscillates. The wall of the casing is thickened at the middle line so that the wing piston shall have less clearance there than at any other point, the purpose being to provide the maximum resistance to the deflection of the steering wheels when they are in



VEEDER STEERING CHECK.

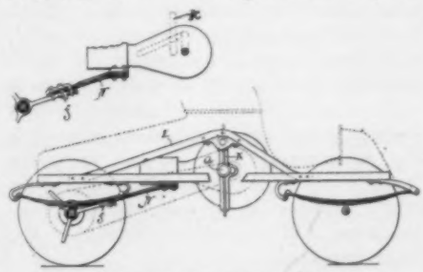
parallelism with the vehicle and the driving is straight ahead, with the tiller in its middle positon. In case wheel steering is used, the advantage of greatest power to resist accidental deflection when the vehicle is traveling in a straight line would still be present.

The casing, *k*, is provided with a suitable step for the stem, *m*, of the wing piston, and at the top a stuffing box is fitted with suitable means for filling the casing with a liquid. The top of the casing is conical in form so that air bubbles formed by the movement of the vane, *l*, will collect around the stem, *m*, a further provision for the elimination of air bubbles being found in the annular chamber, *k'*, which communicates with the filling head and also the casing.

Anti-Vibration Engine Support.

No. 751,529.—Jonathan D. Maxwell, of Detroit, Mich. A method of motor suspension for a single-cylinder horizontal motor which will obviate the rythmic vibrations set up by the angularity of the piston rod ordinarily transmitted to the vehicle.

The motor is carried on trunnions, *a*, which are provided in the transverse subframe *K*, the subframe depending from longitudinal raised girders, *L*. The trunnions are placed at the neutral axis of vibration, just back of the engine shaft and parallel with it, providing a point of support where the impulses from the motor are equally disposed in regard to the downward thrust of the rear end of the engine and the lift of the front end. The rear of the engine is carried on a third support formed of a number of spring steel leaves, *N*. with a provision at *f* for



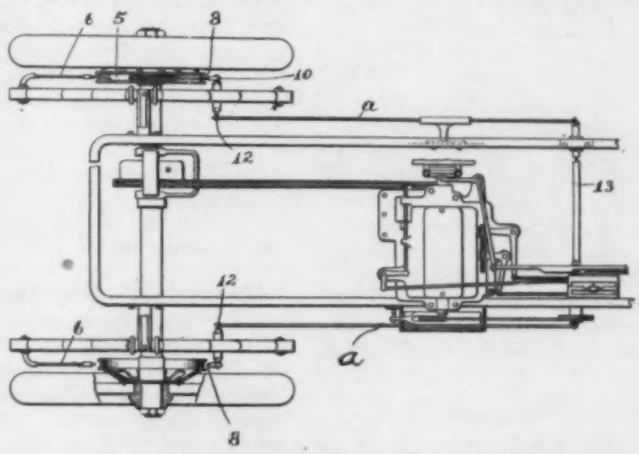
ANTI-VIBRATION ENGINE SUPPORT.

chain adjustment, the flexibility rendering the motor free from shocks due to road vibration.

Cable Brake System.

No. 752,582.—James W. Packard and William A. Hatcher, of Warren, O. An improvement in braking mechanism for motor vehicles whereby brakes may be applied with equal force to a pair of wheels or driving axles by means of equalizing connections between a brake lever and the brake.

The vehicle wheels are provided with brake drums which are flanged on both sides. Between the flanges, and surrounding the drums are brake bands, 5, one end of each being secured by rods, 6, to the rear end of the vehicle springs. The free ends of the brake bands are connected to short cables, 8, which extend through slots in the bands and are attached to the arms, 10, upon rock shafts journaled in bearings secured to the springs, the rock-shafts



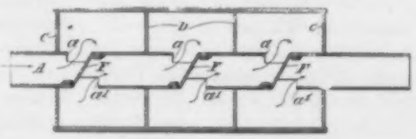
PACKARD CABLE BRAKE ACTUATING SYSTEM.

having arms, 12, to which are attached the cables *a*. The cable, *a*, extends through a tubular rock-shaft, 13, which is arranged transversely of the vehicle frame, the ends of the rock-shaft extending outwardly sufficient to make the pull of the cable direct. The cable passes through an eye in the brake lever and also through a corresponding eye in an upright arm on the opposite side of the car on the other end of the tubular shaft. The cable, *a*, is not secured at any point in the tubular rock-shaft and when the brake lever is thrown forward the movement causes any slack in the cable and brake bands to be taken up and the further movement of the lever compresses the bands, braking the rear wheels of the vehicle, and, by reason of the continuous form of the cable, with equal force.

Dunlop Muffler.

No. 752,386.—John B. Dunlop and John B. Dunlop, Jr., of Dublin, Ireland.

The exhaust gases from the motor are led to a cylindrical chamber, *C*, which is fitted in its interior with two or more baffle plates or discs, *D*, the gases passing from the pipe, *A*, through an opening, *a*, suitable holes being cut on the opposite sides of the pipe, *A*, and a stop plate, *F*, being placed in the pipe in such a way that the exhaust gases are deflected into the first expansion chamber. After expansion the gases pass back into the pipe at *a'* to



DUNLOP HELICAL MUFFLER.

further expand in the second chamber, and thence to the third chamber, finally emerging from the pipe and escaping in to the atmosphere. The muffler may be made with two tubes and as many chambers as may be desired.

Horses and wagons are too slow for the oil fields of Kansas. So the owner of several wells in different sections of the field makes his rounds in an automobile. A. C. Stich first set the pace in Independence and has been followed by C. H. Pattison, W. A. Thompson and J. F. Colt. One day early in February Mr. Thompson drove from Independence to Peru and return, a round trip of sixty miles, and had most of the afternoon left for other business. The roads are over rolling prairie and of clay.

ILLUSTRATED LECTURE AT THE AUTOMOBILE CLUB OF AMERICA.

Stereopticon views of "timber that grows at timber line" and the mountains of snow and ice above it, with an interesting talk on the subject by G. O. Shields, president of the League of American Sportsmen, served to draw about forty members to the Automobile Club of America last Tuesday night for the regular weekly gathering.

Mr. Shields took a trip through the Canadian Rockies last summer, and his pictures of trees and glaciers show scenes which few motorists know anything about. His rather original manner of narrating his experience made the occasion amusing as well as educational. Captain Hedges, of the house committee, and Secretary Butler saw to it that members and their friends were not sent away without hospitable entertainment, about thirty remaining for supper. In attendance were:

Captain Homer W. Hedge, J. McMillian-Hamilton, William P. Kennedy, Clarence A. Postley, Harry G. Osburn, J. G. Kugelman, A. L. Simpson, B. L. Taylor, Frederick B. Cochran, R. L. Niles, William Hawley, George B. Adams, J. M. Lansden, Morgan Davis, E. B. Roulet. Lieut. de Zaldy, E. B. Jackson, F. M. Lande, Emerson Brooks, W. D. Gash, Allan H. Whiting, Henry C. Cryder, S. B. Stevens, G. O. Shields, Robert Walter Goelet, Bertrand L. Taylor and Samuel H. Valentine.

Energetic New Club in Germantown.

The Pelham Automobile Club of Germantown, one of Philadelphia's prettiest suburbs, was organized a few weeks ago and incorporation papers will be signed by the Governor some time during the present week, and steps will be taken immediately to build a comfortable clubhouse on a plot of ground at Emlen and Carpenter Streets, on which an option has been secured. The plans have already been made and approved, and bids called for. As soon as the charter is received the bids will be opened, the contract awarded and work begun. Prescott Adamson is president of the new club, whose membership includes automobilists not alone in Germantown and Chestnut Hill, but quite a number residing several miles distant.

Milwaukee Club Declares Its Objects.

Special Correspondence.

MILWAUKEE, Feb. 20.—The Milwaukee Automobile Club placed itself on record last Thursday night as opposed to automobile racing and the speeding of machines. From this time forth road races will be frowned upon by the club, and its own members will be bound by rules requiring them to refrain from dangerous speeding. The club declared its object to be the banding together of owners with the one idea of getting the greatest enjoyment possible out of the automobile without inconvenience to others.

Preliminary steps were taken at the meeting to incorporate the club and a club-house fund will shortly be started looking toward the establishment in the near future of permanent and finely-furnished headquarters for the organization. The club at present has nearly 100 members, but there are more than 400 motor vehicles in the city and efforts for the present are to be bent toward increasing the membership. A nominal initiation fee is to be charged and the money so raised, augmented by subscriptions from members, will be devoted largely to the clubhouse fund.

New Jersey Club Would Promote Races.

Special Correspondence.

NEWARK, Feb. 23.—The New Jersey Automobile and Motor Club is preparing for an active season which will be opened the first of next month with a members' banquet. The house committee is making the necessary arrangements for the affair. Prominent automobilists from New York will be invited to be present and deliver addresses. At the banquet the advisability of securing a track for races next summer will be discussed. Two tracks are in view, one, a half-mile track at Waverly, near this city, which is under the jurisdiction of the Essex Park Commission, and a larger track at Linden, near Elizabeth. Which ever of the tracks is secured will be put in shape for some Saturday in May, when the season will be formally opened. On this day a parade of many motorists will be held through the principal streets, ending at the track in time for the events.

The club has also decided to do all in its power to defeat the bill recently introduced into the New Jersey Legislature by Mr. Lee of Atlantic City authorizing the police officials and constables of the State to arrest without warrants motorists who, in their opinion, are exceeding the speed limit. The president of the club, H. M. Shanley, Jr., and the members of the legal committee will interview prominent politicians regarding the bill.

Minneapolis Chauffeurs Organizing.

Special Correspondence.

MINNEAPOLIS, Feb. 20.—A meeting of professional motor car operators of the city for the purpose of organization was held Thursday evening at the call of E. S. Reynolds and N. E. Brown. There are not many chauffeurs in Minneapolis yet, but several automobile mechanics will this year devote their entire attention to this line. The meeting was purely informal. The membership of the club will be limited to competent persons who have a thorough knowledge of automobiles. It is the intention when the local organization is perfected to seek membership in the American Motor League.

MOTOR BICYCLES AT SPORTSMEN'S SHOW IN NEW YORK.

The bicycle section of the show is located in the Concert Hall of the Garden and contains a number of attractive displays of bicycles and motorcycles, with a fair sprinkling of sundries. The most comprehensive exhibit is made by the Pope Mfg. Co., a variety of models being shown from the several factories of the company. The Pope motorcycle is shown in four models—the Columbia, Rambler, Cleveland and Tribune—all of which are equipped with the same power plant and chain drive, the difference existing in the frames and finishes.

The other motorcycles shown are the Indian, Marsh, Merkel, Auto-Bi and Racycle, all being late models seen at the recent automobile shows. A single foreign motorcycle, the Griffon, is exhibited by the Siegel-Cooper Co. This machine is made in France, where it has met with remarkable success, a very large number of important events having been won on Griffon machines, Lamberjack for two consecutive years winning the Gallion and Chateau-Thierry hill-climbing contests. The 2 3-4 horsepower motor is vertically attached to the frame by strong bridges brazed to the lower end of the lower main tube and the front of the bottom bracket. The inlet valve is mechanically actuated from a camshaft which also operates the exhaust valve. The latest pattern Longuemare carbureter is fitted and an ample muffler to silence the exhaust. Speed control is by advancing the ignition and varying the lift of the exhaust valve.

The frame of the machine is built strong enough to stand hard usage and the front forks are made in double round section with heavy plate triple crown. Efficient rim brakes are fitted to operate on both wheels. The drive is by wide flat belt with rear wheel set in a fixed position in the rear fork ends, chain adjustment being provided for by the rotation of the crankshaft in an eccentric bottom bracket.

Recent Incorporations.

Thompson Air Compressor Co., New York City; capital, $50 000; manufacturing pumps, motors, etc. Incorporators, Charles O. Thompson, H. M. Seely and William M. Stockbridge.

Rambler Automobile Co., San Antonio, Texas; to deal in automobiles; capital, $5,000.

DeConde Mfg. Co., Cambridge, Mass.; capital, $5,000; to manufacture automobiles. Incorporators, F. A. Wyman, C. A. Hammet, Ernest E. Saunders.

Jones-Corbin Automobile Co.; Philadelphia; capital, $30,000.

Rambler Automobile Co., San Antonio, Texas; capital, $5,000. Incorporators, A. Staacke, A. C. Shell of San Antonio, and F. Kirchoffer of San Francisco.

News Notes and Trade Items.

The Manufacturers Foundry Co. of Waterbury, Conn., is making a specialty of water-jacketed cylinder castings.

C. C. Pevear is now associated with the Wheelock Motor Car Clock Co., Boston, Mass., as sales manager.

W. J. Roberts of Coldwater, Mich., is in the market for an automobile and would like to receive catalogues.

As a result of orders taken at the New York show, the Electric Vehicle Co., of Hartford, is rushing work and contemplates increasing its force of workmen.

R. C. Skiles, trustee of the Shelby Motor Car Co., has declared a 2 per cent. dividend to the creditors, to be followed by another of 3 per cent. in a short time.

A garage has opened at 62 West Forty-third Street, New York, and will be the home of Elmore cars. It is conducted by the Richmond Automobile Company.

The American Veneer Co. of New Orange, N. J., is making King of the Belgians bodies of laminated wood for the market.

The Central Automobile Company of New York has secured the exclusive agency in this country for the Vinot et Deguingand car, which is a French product similar to the Renault.

An agency for Clement cars has been placed in Chicago by the Sidney B. Bowman Automobile Company of New York, which now confines itself exclusively to handling this French product.

The Howarth & Rogers Co., Amesbury, Mass., builders of carriage bodies, have installed new and special machinery for making automobile bodies in all styles and designs.

W. A. Russell & Co , of Detroit, Mich., have secured the agency for the Winton, Darracq, Berg and Woods machines. Their garage will be located at 250-252 Jefferson Avenue.

The Olds Motor Works factories at Lansing and Detroit, Mich., have been connected by a private telephone line 100 miles long as they found the ordinary telephone service inadequate to their demands.

New appointments made in the agencies of the Knox Automobile Co. are as follows: Chisholm-Philips Automobilium Co., 1322 Euclid Avenue, Cleveland, O.; E. M. Rogers & Co., Plain Street. Albany, N. Y.; Colorado Automobile Co., Court Place, Denver, Colo.

The E. J. Willis Co. of New York City has taken the agency for the Baldwin marine motors which it now has on exhition at the Sportsmen's Show, New York. The company has also secured space at the Boston Exhibition. Mr. Willis reports having secured contracts for over 7,500 Yankee spark plugs, besides securing orders for many other automobile supplies for which the Willis company is the agent.

The White Sewing Machine Co., of Detroit, Mich., has leased fifty-four feet of land on the east side of Farrar Street, on which it will build a three-story brick salesroom and repository for automobiles.

The Century Motor Vehicle Company of Syracuse has filed a voluntary petition in bankruptcy. The liabilities are said to be $40,000 and endorsed paper $3,000. The assets, consisting of machinery, etc., amount to between $40,000 and $60,000.

Queen automobiles, made by the C. H. Blomstrom Motor Co., and Wolverines manufactured by the Reid Manufacturing Co., are now represented in New York by Horace B. Day, formerly with the Cadillac Company, who has opened a well-appointed garage at 60 West Forty-third Street, New York. Both machines are made in Detroit, but have not heretofore been marketed in the East.

The Pierce Engine Co., of Racine Junction, Wis., is putting through a lot of 100 light cars, the first ten of which will be ready for delivery in May. These new cars will have a single-cylinder, vertical, water-cooled motor in front and will weigh about 1,000 pounds. The Pierce company last year built the Mitchell cars for the Wisconsin Wheel Works. It will continue to manufacture Pierce Marine motors and Pierce launches, which is its principal business.

A traveling demonstrator for a manufacturer of light runabouts recently importuned a Yankee farmer to buy one of the vehicles at a close cash figure. "I'd rather put the money into cows," was the farmer's answer. "But think how you'd look riding into town on the back of one of your Jerseys," said the motorist. "Perhaps I would look a bit foolish," replied the agriculturist, "but think how I'd be sized up if I was caught trying to milk an automobile."

The Automobile Club of America has received a letter from Secretary J. W. Orde, of the Automobile Club of Great Britain and Ireland, stating that if he is given two or three days' notice of the intention of any of the members of the A. C. A. to go to England to tour and will furnish him with a description of the tourist's car and the probable date of its arrival and port of entry, together with name and address of the owner, Secretary Orde will have the necessary plates and license ready at the landing point, thereby saving delay and annoyance.

A bicycle power plant has been received by E. B. Gallaher, the New York agent for Georges-Richard Brasier cars. It consists of a triangular frame to fit the frame of any bicycle and has a two-horsepower motor, storage batteries, gasoline tanks and other necessary equipment.

It was learned this week that A. L. Picard, who served as starter at most of the track meets last season as well as at the Florida tournament, has written to President Whipple of the American Automobile Association, asking to be excused from further connection with race meets in that capacity, owing to his increasing duties in the sales department of the American Darracq Automobile Company.

Minneapolis was well represented at the Chicago automobile show, some member from every Flour City firm being there, and all have returned feeling enthusiastic. Many of the dealers met other Minneapolis people there and found it much easier to sell machines at the show than at home. Every dealer who attended the show has sales to report as a direct result.

W. H. Kitto, of the challenge Engineering Company, with headquarters in London, arrived at New York on the steamship *Cedric* last Sunday and will spend a few weeks visiting the automobile factories with a view of having some American machines built after designs of his own. Mr. Kitto was here last fall. He is a dealer in automobiles and parts.

The total sales made at the Chicago show by Orlando F. Weber & Co., aggregated more than $100,000 and as a direct result of the sales made at the show the Weber company has placed an order for one-fourth of the entire output of the Pope Motor Car Co. for the year, and has taken the Chicago agency for all the machines manufactured by the Pope Mfg. Co., including the Pope-Tribune and Pope-Hartford.

The Chicago Motor Vehicle Co. has been placed in the hands of a receiver, on February 16, on petition of two of the stockholders who claim that an anticipated scheme to divert the assets to the Monarch Railway Car Company, capitalized at $2,000,000 under the laws of Maine, would defraud them should it be carried out. The Chicago Motor Vehicle Co. is capitalized at $1,000,000 and for the past two years has operated a large factory at Harvey, Ill.

Despite reports to the contrary, Lee Straus says there will be an automobile meet at Virginia Beach in May. If the Virginia East Coast Automobile Association does not care to promote a tournament, Mr. Straus says he will undertake to conduct the affair himself. It will start about May 7, instead of a week later as at first announced. He will apply for an A. A. A. permit.

According to dispatches sent from Norfolk, Va., the local association has decided to hold its big meet in summer instead of in May, as was proposed when Mr. Straus visited the beach. A State affair may be run off in April or May.

E. R. Thomas, D. H. Lewis, H. Civileux and John J. Gibson, of Buffalo, have been appointed a committee to formulate plans for a national organization of retail automobile dealers. It is proposed to invite every local trade organization in the country to send delegates to a meeting to be held during the week of the Buffalo show, March 6 to 14, to perfect plans for permanent organization.

The National Association of Retail Automobile Dealers, which effected preliminary organization at the Chicago show week before last, will hold a second meeting for permanent organization at the second annual show of the Boston Automobile Dealers' Association to be held in Symphony Hall, Boston, March 14 to 20. During the same week the Boston Dealers' Association will give its second annual dinner, at which it will entertain visitors. The demand for space at the show so far exceeded that available in Symphony Hall that the show committee was obliged to arrange with the management of the motor boat show, to be held at the same time, in Horticultural Hall, across the street, for the admission of some automobiles, with one ticket admitting to both displays.

The four Napier cars, two of 15 and two of 24 horsepower, which were exhibited at the Paris Salon, will be on view at the Boston show, which opens March 14. These will be the first automobiles of English manufacture imported into the United States by other than users, and as representative of the highest order of workmanship and design of Great Britain, will undoubtedly attract especial attention. The cars are being handled by the Napier Motor Company, a Boston corporation, which has secured the American rights for the sale of the Napier cars and motors and also a license to manufacture cars, boats and motors under the Napier patents. The Central Automobile Company of New York, licensee under the Selden patents, is selling and distributing agent for the Napier products.

Although the Lozier Motor Co. of New York believes that the demand will be for motor boats of moderate speed rather than for the extreme type of high-speed automobile racers and is building a line of semi-racing boats at their New York City works at the mouth of Westchester Creek, 28 to 40 feet in length, it is building for advertising purposes an automobile boat 25 feet in length to attain a speed of twenty-one miles an hour. The hull will weigh less than 500 pounds and will be equipped with a 24-30 horsepower Lozier automobile engine turning an 18-inch wheel 1,000 r.p.m. The total weight of the hull and engine will be less than 900 pounds. The company also has an automobile racing boat 37 feet in length in course of construction. In their boat works at Plattsburg, N. Y., the company has under construction 150 launches, 21 and 25 feet in length, 100 of which have been completed and are ready for delivery. At the New York City works in addition to the semi-racers, and automobile boats, the following are being built: 50-foot oyster boat, 32-foot twin screw shallow draft work boat for Texas, 21-foot yacht's tender, 31 foot cruising launch, 25-foot boat with five windows forward, and several small tenders.

A. A. Moore, Jr., of San Francisco, in a letter to the Locomobile Company of America, describes a trip from his home to Los Angeles by the Coast Road in his four-cylinder Locomobile touring car. The distance was 487 miles, 230 of which was over mountains. Seven ranges were crossed, and, so far as Mr. Moore could ascertain, only about one in ten cars that had attempted the trip succeeded in getting through. As an indication of the character of the traveling, he states that one day he ran out of gasoline in the seventy-fifth mile, although under normal conditions the car should run 140 miles on its tank capacity. While one of the party took a train for Santa Barbara to get gasoline, the others pulled down the curtains and slept in the car on a cliff overlooking the Pacific. During the whole trip the engine never stopped of its own accord; not even a spark plug was removed nor a monkey-wrench applied. There was only one case of tire trouble, an outer shoe blowing out, although the tires had been used for 800 miles before the start of the trip. On one long mountain grade a section of a wood brake shoe was completely burned up, not even leaving charred ashes.

Metropolitan News and Racing Notes.

Sixty days of sleighing in New York has been anything but conducive to the sale of automobiles and for that reason dealers have been anxiously awaiting the arrival of spring, which, judging from present weather conditions is beginning to put in an appearance. The winter has been one of the coldest in a long term of years, and those who deal in power-driven machines have had ample time to prepare their places for the rush which seems certain in the spring.

In order to find which locality is preferred for a country club-house, a letter will be sent this week to all members of the Automobile Club of America asking them to notify the secretary whether they favor Long Island, Westchester County or New Jersey as the territory in which the new clubhouse should be located after which the special committee consisting of T. M. Hilliard, Emerson Brooks and Homer W. Hedge will have something tangible to work on. There has been some difference of opinion as to the best place for a country headquarters, but the greatest number seem to favor a course on Long Island. It is not the intention to build an elaborate clubhouse with a track, as has been suggested, but to secure a comfortable house of some sort, preferably near Long Island Sound, where motor boats could have an anchorage, and with sufficient ground for a golf course and tennis courts. It is believed the main thing is to provide a nearby headquarters with a garage and other conveniences for motorists. Mr. Hilliard has expressed the opinion that instead of being limited to 400, the membership of the Automobile Club of America should be allowed to run up to at least 1,000. This number would enable the club to properly maintain a city and country clubhouse commensurate with its position in the automobile world.

It is believed that something must be radically wrong with the classification of automobiles in racing, when one or two cars capture all the prizes at a tournament, as was the case at the Florida affair last month. As W. K. Vanderbilt, Jr., rightly expressed it, the mistake was to compel the small cars to compete in the same events with the ponderous machines of high power. Future tournaments will undoubtedly benefit by the experience and, in arranging their programs, provide some race where the lightweight and middleweight machines will be called upon to compete only against cars of their own class. It is hardly fair to ask a 30 or 40 horsepower machine, weighing 1,600 pounds, to start in the same class with a 90 horsepower machine weighing 2,200 pounds.

Not the least interesting item of New York news is the announcement by Alexander Fisher that he has secured the exclusive agency in this country for the Martini automobile, made by the Martini Arms Company, of Geneva, Switzerland. The car is licensed by the Rochet-Schneider people and is a duplicate of that machine, with improvements that make it better adapted for use in this country. The first four cars now on their way are of twenty horsepower each. Mr. Fisher will also supply motors for boats.

With the launching of the H. A. Clark Transportation Co., Brooklynites will have an opportunity to view the Borough of Manhattan from the seats of luxurious automobiles. The company is organized to take visitors every Sunday morning through the principal streets of Manhattan, including the East Side district, which is so foreign to the average inhabitant of New York. The start will be made from Bedford Avenue and Fulton Street, at 10 o'clock and a second machine at 11 o'clock.

F. A. LaRoche says he has cancelled the order for the freak racing machine which he had ordered built for American tracks, as with the new classification of racing cars he believes machines of the regular type will have a fair chance of winning. Mr. La Roche will probably have one of the Darracq cup racers and also a light racing machine for use on the tracks this season.